County Borough  of Wolverhampton.

REPORT

UPON THE

HEALTH OF WOLVERHAMPTON,

FOR THE YEAR 1897,

BY

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MEDICAL OFFICER'S REPORT,

1897.

PREVALENCE AND PREVENTION OF INFECTIOUS DISEASE.

Table 2 gives the weekly numbers of cases of certain diseases certified by Medical Men under the Infectious Diseases Notification Act. The crosses represent the degree to which the disease heading those columns prevailed—these are only rough approximations. Any certificate detected as erroneous before the close of the week is not entered.

Table 1 gives the total number of cases about which enquiries were made and which were recorded; no erroneous cases are entered in this Table.

Small-Pox.—No case has been reported during the year.

Measles.—The Quarterly cases of, and deaths from, Measles since 1884 are as follows :—

	1884	1885	1886	1887
Cases	272, 710, 143, 2;	4, 2,..,17;	21, 9, 189, 959;	124, 17, 31, 22;
Deaths	11, 66, 20, 1;	1, ,..,..;	.., .., 8, 103;	19, 4, 7, 1;
	1888	1889	1890	1891
Cases	119, 149, 166, 435;	150, 228, 78, 141;	68, 45, 139, 230;	73, 4, 11, 275;
Deaths	9, 6, 5, 19;	10, 11, 11, 8;	3, 10, 5, 14;	5,.., .., 20;
	1892	1893	1894	
Cases	501, 415, 82, 33;	21, 18, 106, 248;	530, 294, 15, 4	
Deaths	21, 16, 3, 1;	6, .., 5, 10;	46, 27, .., ..;	
	1895	1896	1897	
Cases	2, 83, 215, 549;	159, 69, 36, 45;	83, 218, 249, 400.	
Deaths	... .., 7, 33;	6, .., 1, 1;	3, 11, 16, 19.	

The numbers of cases of Measles reported are only rough approximations to those actually occurring; there is no definite system of reporting this disease; probably the numbers of deaths give almost as accurate an idea of the actual prevalence. The only control exercised over Measles is that of prohibiting the attendance at school of children from infected houses; and occasionally the closure of a school. The last measure has not been adopted during the year. We had a remarkable freedom from Measles since the First Quarter of 1896 until May of this year; when it became mildly epidemic, commencing in the northern side of the Borough and extending throughout the year until at its close the south was mostly affected, the north being then almost free. At the close of the year the prevalence was rapidly declining.

Scarlet Fever.—We began recording our cases in 1884, but as we have only had notification since 1890 (inclusive) the returns before that year are probably less complete than those since. The death records in my possession go back to 1870; the following are the deaths since that year, and the known cases since 1884:—

	1870	1871	1872	1873	1874	1875	1876
Deaths	54,	26,	69,	121,	34,	26,	58.
	1877	1878	1879	1880	1881	1882	1883
Deaths	226,	40,	17,	39,	64,	27,	24.
	1884	1885	1886	1887	1888	1889	1890
Deaths	37,	46,	5,	16,	17,	6,	13.
Cases	212,	244,	47,	168,	194,	124,	500.
	1891	1892	1893	1894	1895	1896	1897
Deaths	14,	3,	25,	55,	34,	21,	24.
Cases	419,	242,	623,	1096,	592,	372,	529.

The fatality varies in different periods, so that the deaths bear little ratio to the cases; as a rule with increased prevalence there is increased fatality, so that the higher death returns do not mean quite a proportionate increase in cases.

The following Table gives Quarterly particulars as to the cases in the two Sub-Districts. None of the cases in the General Hospital were sent in by us. The deaths are those of the cases reported in each

Quarter, and sometimes occur later: they therefore do not correspond to the deaths in the Mortality Tables, which are those registered in each Quarter:—

Quarters.			1st	2nd	3rd	4th	Year
East ...	Total ...	Cases ...	49	43	58	69	219
		Deaths ...	2	5	3	1	11
	Borough Hospital	Cases ...	45	35	46	53	179
		Deaths ...	1	4	3	1	9
	General Hospital	Cases ...	...	...	1	2	3
		Deaths ...	...	...	...	...	...
	At Home	Cases ...	4	8	11	14	37
		Deaths ...	1	1	...	...	2
West ...	Total ...	Cases ...	40*a*	33	96*b*	141*c*	310
		Deaths .	1	1	7	8	17
	Borough Hospital	Cases ...	23	21	73	90	207
		Deaths ...	..	1	7	6	14
	General Hospital	Cases ...	...	1	...	1	2
		Deaths ...	...	...	...	...	..
	At Home	Cases ...	15	11	19	31	76
		Deaths ..	1	...	...	2*d*	3

a.—Two were in a Public Institution and kept there.

b.—Four ,, ,, ,, ,,

c.—Nineteen ,, ,, ,, ,,

d.—One of these was registered "Diphtheria."

On account of the larger size of many of the houses in the West a greater number of cases in this Sub-District have fair facility for home isolation; hence the greater proportion of cases so treated there. The following table gives the proportion of cases kept at home in the Sub-Districts since 1884. I give the total deaths also, because the cases were imperfectly reported before 1890:—

	East.			West.		
	Total Deaths.	Cases.	Cases at home.	Total Deaths.	Cases.	Cases at home.
1884	28	?	?	9	?	?
1885	37	146	78	9	98	70
1886	2	19	4	3	28	19
1887	5	52	25	11	116	82
1888	5	53	27	12	141	56
1889	0	45	16	5	79	29
1890	5	239	61	8	261	100
1891	7	154	28	7	265	74
1892	2	76	19	1	166	50
1893	17	301	20	8	322	47
1894	39	600	53	16	496	104
1895	16	234	28	18	358	98
1896	10	155	20	11	217	55
1897	11	219	37	15	310	77

The above figures are very remarkable; the greater child population of the East, and the far greater facilities which its larger proportion of poor and crowded areas afford for the spread of infection,

would lead one to suppose that Scarlet Fever would be much more prevalent there than in the West. This was the case in 1884-5, and 1894. In 1884-5 there was very little Hospital isolation. (I have not been able to get the figures for the Sub-Districts separately prior to this). Then followed a long period of peculiarly low prevalence of Scarlet Fever; during which we were increasing the amount of our Hospital isolation, until in the East it became fairly complete. During 1893 the prevalence became very heavy, and judging by the deaths, the prevalence in the East was more than in the West, although the reported cases were more in the latter. Probably the mortality was actually greater amongst the feebler children in the East, but most likely too a number of mild cases were overlooked in that Sub-District, and thus the proportion of cases unisolated would be much greater than appears from the Table. Next year, 1894, we find a very heavy prevalence of Scarlet Fever, the East far exceeding the West both in number of cases and in mortality. Since this the prevalence has again declined, but much more in the East, which has had fewer cases and deaths than the West each year since. These facts apparently indicate that in spite of the greater facilities which exist for the extension of Scarlet Fever in the East, the fairly complete Hospital isolation attained there renders that Sub-District during ordinary years less affected than the West; but this protection fails when a more epidemic prevalence exposes the poorer and more crowded Sub-District to the danger of overlooked cases spreading infection; at a time, too, when the unknown epidemic conditions which favour infection are present. At such periods the East Sub-District is more affected than the West.

The following is the summary of the apparent effects of removal and home care on the spread of the infection in the households attacked during the year. No account is taken of houses where there is no susceptible child after the first case attacked; children who have already had Scarlet Fever being counted as insusceptible:—

East Sub-District.—During the year there were 90 instances in which no second case occurred after the removal to the Hospital of a first case. In these 90 houses there remained 241 children who had not previously had Scarlet Fever.

In two houses 2 children were taken ill simultaneously; they were removed, and 7 children remained free.

In 12 instances secondary cases occurred without Hospital removal, there were 17 such cases; they occurred at the following intervals after the previous case was taken ill:—one day, 1 case; two days, 3 cases; three, four, six, seven, and nine days, 1 case each; twelve days, 6 cases; seventeen days, 2 cases.

In most of these Hospital removal was ultimately resorted to, and in six instances, where 13 susceptible children still remained, there was no further recurrence.

Thus in 98 instances there was no further case after Hospital removal, though 261 children remained in these houses.

In 7 instances further cases occurred *after* Hospital removal; 8 cases so occurring at the following intervals after the removal:—one day, 3 cases; four days, 2 cases; seven and ten days, 1 case each; twenty-three days, 1 case. The first three cases were certainly infected before removal took place, and the last was probably independent infection; so that only four cases could be considered as due to failure of removal to check extension.

In these seven houses there still remained 12 children who escaped. So that altogether 273 children escaped infection after Hospital removal.

In the East, cases were treated at home in thirty houses during the year; of these, in six there was no other child; in eight all the other children (13) were at once sent away. In sixteen houses prolonged isolation was attempted, other children (38 in number) being kept at home. In six of these houses secondary cases occurred, 7 children being taken ill; the intervals after previous illness being one, seven, and nine days, 1 case each; twelve days, 3 cases; and seventeen days, 1 case.

West Sub-District.—There were 105 instances in which one case of Scarlet Fever was removed, and no other occurred. In these 105 houses there remained 280 susceptible children.

In one house 2 cases occurred simultaneously; these were removed, and 3 children remained unattacked.

In 24 instances secondary cases occurred without Hospital removal; there were 36 such cases; they occurred at the following intervals after the preceding case had been taken ill:—one day, 2 cases; two days, 5 cases; three days, 11 cases; five days, 1 case; six days, 3 cases; seven days, 2 cases; twelve days, 1 case; thirteen days, 2 cases; fourteen days, 1 case; fifteen days, 3 cases; forty-seven days, 2 cases; fifty, sixty-four, and sixty-nine days, 1 case each.

In some of these Hospital removal was ultimately effected; in five instances there was no recurrence, I2 children escaping.

Thus in 111 houses there was no further case after Hospital removal, though 295 children remained.

In 11 houses further cases occurred after Hospital removal, 14 cases occurring at the following intervals after removal:—one day, 1 case; two days, 4 cases: three days, 2 cases; four, five, eight, and fourteen days, 1 case each; twenty-five days, 2 cases; and twenty-seven days, 1 case. The first 7 cases were almost certainly infected before removal, and the last 3 were probably independent infection, so that removal only failed to limit infection in 4 cases.

In 8 of these houses 15 children remained unattacked after final removal, so that altogether 310 children escaped infection after Hospital removal.

In the West cases were treated at home in 60 houses. In 26 the only children were those primarily attacked. In 9 all the other children were sent away. In 1 the patient died in two days, in another in seven days. In 23 houses prolonged isolation was attempted, other children (43) remaining at home. In 11 of these secondary cases occurred, 15 cases occurring at the following intervals after the primary case:—Three days, 3 cases; seven, twelve, thirteen, and fourteen days, 1 case each; fifteen days, 3 cases; forty-seven days, 2 cases; fifty, sixty-four, and sixty-nine days, 1 case each.

The Summary for the Borough is as follows: —Hospital removal was effected in 227 houses. After the first removals there remained in these houses 605 children. In 209 of these houses there was no recurrence after removal, 556 children escaping. In only 18 houses was there recurrence, 22 further children being attacked. In these 18 houses 27 children still escaped after final Hospital removals. Of the 22 secondary cases 10 occurred within three days of the removal, and were probably infected before. Four occurred more than three weeks after the removal of the primary case, and were probably due to independent infection, leaving only 8 cases possibly due to failure.

Cases were treated at home, with reasonable facility for isolation, in 39 houses, where there were 81 other children besides the primary cases. Secondary cases occurred in 17 of these houses, 22 cases occurring. 4 of these were within three days of the primary attack, and were probably infected before any care was taken. 2 were over 60 days after the primary attack and were more of the nature of "return" cases than failures in isolation. Thus 18 cases were probably due to failure.

The following Tabular Statement shows the results at a glance:—

	Hospital Removal.	Home Isolation.
Total houses	227	39
Cases recurred in	18 or 7·9%	17 or 43·5%
Number of children after primary cases	605	81
Number subsequently attacked ..	22 or 3·6%	22 or 27·1%
Number possibly due to failure ...	8 or 1·3%	18 or 22·2%
Number of children escaping ...	583 or 96·3%	59 or 72·8%

The following gives the total results for the four years, 1894, 1895, 1896, and 1897:—

	Hospital.	Home.
Total houses	1225	137
Cases recurred in	130	64

	Hospital.	Home.
Number of children after primary cases	3,509	298
Number of these attacked ..	167 or 4·7%	95 or 31·8%
Number possibly due to failure ...	78 or 2·2%	67 or 22·3%
Number of children escaping ...	3,342 or 95·2%	203 or 68·1%

I must refer to the comments in the 1895 Report, page 11; the above figures further confirm them.

Diphtheria.—The Quarterly cases of, and deaths from, Diphtheria in the Borough since 1890 have been:—

	1890.	1891.	1892.	1893.
Cases	11, 3, 4, 5;	8, 8, 6, 11;	1, 7, 4, 4;	7, 5, 12, 11;
Deaths	3, .., .., 1;	1, 2, 1, 1;	.., 3, 1, ..;	.., 1, 1, 3;

	1894.	1895.	1896.	1897.
Cases	11, 16, 33, 22;	34, 78, 56, 140;	108, 101, 87, 64;	73, 72, 75, 91.
Deaths	5, 8, 10, 10;	19, 24, 14, 27;	19, 15, 9, 12;	11, 10, 11, 26.

The Annual cases and deaths in the Sub-Districts have been:—

		1890	1891	1892	1893	1894	1895	1896	1897
East	Cases	11	8	3	14	36	88	114	121
	Deaths	2	1	2	2	20	29	21	21
West	Cases	12	25	13	21	46	220	246	190
	Deaths	2	4	2	3	13	55	34	37

As I have several times pointed out our Diphtheria statistics are uncertain in two directions; a number of real cases are probably never seen by a doctor, and, therefore, never heard of; and a proportion of the cases reported are probably not Diphtheria; the diagnosis being difficult and uncertain in many instances. Thus the same extreme disproportion which I drew attention to last year between the numbers of cases and of deaths at different periods and in different areas at the same period has again occurred this year. The Quarterly cases reported, and the numbers of those cases that died in the Sub-Districts this year were:—

East	Cases	32	27	33	29
	Died	1	7	6	8
West	Cases	41	45	42	62
	Died	10	5	6	17

These figures cannot be even approximately accurate.

General conclusions can be drawn best from the deaths alone These would indicate that the exceptional prevalence of Diphtheria which began in the Second Quarter of 1894 and reached a maximum at the close of 1895, declined considerably in the Third Quarter of 1896, kept thus until the Fourth Quarter of the present year, when it again nearly reached the maximum. The minimum Quarterly deaths since the exceptional prevalence began is more than double the total yearly deaths for any previous year. The following is a brief summary of the occurrences in each Sub-District during the year :—

East.—Of the 32 cases in the First Quarter 13 were in the Workhouse, one of these being fatal. Of the other 19 cases all recovered, this is a strong presumption against their being Diphtheria. Only 2 cases were in one house, 17 being apparently distinct. In the Second Quarter, of 27 cases 7 died; there were 3 instances of second cases in a house. In the Third Quarter, of 33 cases 6 died; six cases were evidently due to direct personal infection; two cases were after Measles. In the Fourth Quarter, of 29 cases 8 died. In three instances there were two cases in a house.

West.—In the First Quarter, of 41 cases 10 died. Six cases (four being fatal) occurred within a week in two small houses in a confined court, there having been free visiting. Ten cases were in pairs in 5 houses; in several other instances other members of the households had had sore throats. One case sent here from a distance on account of Diphtheria having occurred at her home, developed it on arrival. Of 45 cases in the Second Quarter, 5 died. Three cases were in one house, and two each in four others. In several instances other inmates of the house were complaining of sore throats. In the Third Quarter, of 42 cases 6 died. Five were cases of known direct infection. One case was after Measles; two were associated with Scarlet Fever. In the Fourth Quarter, 17 of 62 cases died. Forty-five were apparently separate cases; two others in separate houses were relations and visited; in one instance there had been a case in the house a few weeks previously; in three instances there were 2 cases in a house, in two of these they were cousins and had

been visiting. In one house, where there had been a case two months previously, six fresh cases occurred at brief intervals.

The foregoing shows that in spite of all that is done in the way of cautioning the public, personal negligence is still answerable for a good deal of our Diphtheria.

Typhoid Fever.—The cases and deaths for the last eight years are—

		1890	1891	1892	1893	1894	1895	1896	1897
East ..	Cases	22	34	22	53	27	78	89	51
	Deaths	6	5	6	7	10	10	24	9
West ..	Cases	22	64	53	83	54	56	49	45
	Deaths	3	11	9	16	7	8	13	12
Borough	Cases	44	98	75	136	81	134	138	96
	Deaths	9	16	15	23	17	18	37	21

We are usually remarkably free from Typhoid Fever; this year the returns are rather below the average. We have had no outbreak at all suggestive of any general cause, but there has been (as we have experienced before) a number of cases of apparently direct infection, which, in connection with a disease like Typhoid Fever, shows an extraordinary amount of ignorance or carelessness. Out of the 51 cases reported in the East during the year 9 were three cases occurring consecutively, in each of three houses; and one case was a nurse attending Typhoid Fever patients. Out of 45 cases in the West, 4 were in one house, 6 were 3 in each of two houses, 2 in another house; another case was nursed by relatives from a different house, two of whom got the Fever. We have, probably, a few cases of Typhoid Fever that are never so ill as to need any medical attendance, and such cases are unreported and overlooked; they would serve to keep up a continual supply of infective material.

Whooping Cough.—In a large town Whooping Cough is almost always more or less present; during the present year there has been no epidemic prevalence, but there was some increased fatality during the First and Third Quarters.

Influenza.—A very mild type of Influenza has apparently been present during the first seven and the last month of the year. Except during January and December very few deaths were attributed to it.

Diarrhœa.—The Diarrhœa epidemic has far surpassed any previous record. The Annual deaths returned as from Diarrhœa since 1875 have been—

1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886
96	105	59	93	48	111	46	87	56	140	50	149
1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	
105	60	84	68	105	55	161	62	135	131	188	

With three exceptions, heavy and light fatalities alternate, probably corresponding to hotter or colder years. The exceptions are 1875-6, 1886-7, and 1895-7, so that not only has this year's return been excessively heavy, but it has followed consecutively on two years, each of most exceptional fatality.

Inasmuch as deaths from the same disease are also registered under several other terms (especially Enteritis, or Gastro-enteric Catarrh) the Diarrhœa returns by themselves do not give an accurate idea of the prevalence of this epidemic. In Table No. 4 all such deaths are classfied together under the heading Diarrhœal Diseases, and this return is the most instructive to consider. It has been fairly well established that the prevalence of Diarrhœal Disease is in proportion to the temperature, and especially to the ground temperature. The following Table gives our weekly deaths from Diarrhœal Diseases during twenty weeks, and the mean weekly temperatures of the air, and of the earth at one and four feet deep:—

Week Ending	Deaths.	Temp. Air.	Temp. 1 ft.	Temp. 4 ft.	Week Ending	Deaths.	Temp. Air.	Temp. 1 ft.	Temp. 4 ft.
		°	°	°			°	°	°
June 12..	—	53·6	58·1	51·5	Aug. 21..	50	56 9	61·2	57·3
,, 19..	—	53·2	60·5	52·2	,, 28..	33	55·0	60 2	57·2
,, 26..	1	58·6	60·4	53·0	Sept. 4..	31	51·1	58·2	56·7
July 3..	—	59·7	63·7	53·9	,, 11..	18	50 3	55·2	55·9
,, 10..	2	53·9	62·6	55·1	,, 18..	13	51·1	56·5	55·3
,, 17..	5	58·8	63·6	55·5	,, 25..	12	50·4	54·5	54·9
,, 24..	4	59·8	63·1	56·3	Oct. 2..	14	52·9	55·4	54·4
,, 31..	23	59·7	63·4	56·5	,, 9..	8	44·9	51·7	54·1
Aug. 7..	26	63·7	65·9	57·1	,, 16..	3	47·4	50 3	53·2
,, 14..	37	57·7	62·6	57·7	,, 23..	2	49·9	51·9	52·6

Allowing about a fortnight for the average period between contracting the disease and death, this table would show that as soon as the 4 ft. deep temperature exceeded 52°, or the 1 ft. deep exceeded 60°, the epidemic began; reached its maximum with the maxima of these temperatures; and that the 1 ft. deep temperature fell more rapidly, and the 4 ft. more slowly than the epidemic subsided. These are the same conclusions indicated by the epidemics of 1895 and 1896.

The following Table gives the annual Diarrhœal deaths since 1890, and the weekly means of the 4 ft. deep earth temperature, the figures in the columns after the second give the number of weeks in each year during which this temperature exceeded the degree at the head of the column:—

	Deaths.	52°	53°	54°	55°	56°	57°	58°
1890	87	19	18	17	15	11	7	—
1891	120	18	15	12	3	—	—	—
1892	67	17	14	8	3	—	—	—
1893	227	22	19	15	13	10	5	1
1894	99	17	15	13	10	2	—	—
1895	255	20	18	16	14	10	—	—
1896	199	20	18	16	14	8	1	—
1897	319	20	17	14	11	7	4	—

The following gives similar figures for the 1 ft. deep earth temperature:—

	Deaths.	60°	61°	62°	63°	64°	65°	66°
1890	87	7	4	1	1	—	—	—
1891	120	4	1	—	—	—	—	—
1892	67	1	—	—	—	—	—	—
1893	227	12	9	8	4	1	1	1
1894	99	6	4	1	1	—	—	—
1895	255	8	3	3	2	—	—	—
1896	199	10	7	4	4	3	—	—
1897	319	11	8	7	5	1	1	—

If we except 1891 these Tables show a marked relationship between the number of Diarrhœal deaths and the number of weeks the 4 ft. temperature exceeded 52° and the 1 ft. 60°. There is no exact relation, but we are only dealing with the deaths, and as the fatality in all diseases varies greatly in different epidemics, the deaths are only a very partial indication of the actual prevalence of the disease. This lack of any information as to the actual number and locality of the cases of illness is a serious hindrance to our arriving at any definite conclusions as to the actual cause of summer Diarrhœa. Indeed it is tolerably certain that the deaths registered as Diarrhœal are most of them due to an Epidemic Disease the most prominent symptom of which is Diarrhœa, and which is largely dependent on temperature for its development; but many of them are due to quite other causes producing the same prominent symptom. This I believe is the explanation of the exception which 1891 is to the relation of temperature to death; that year we had a crop of stone fruit that was really phenomenal in its abundance, damsons especially were practically thrown away; and this would explain the fatality that year as being due to simple Diarrhœa from improper food.

The fatality from Summer Diarrhœa is almost solely amongst young children; of our 319 Diarrhœal deaths 305 were of children under 5 years.

Summer Diarrhœa fatality is almost limited to the towns, and especially the large towns. During the Third Quarter of the year the death-rate from Diarrhœa amongst the 33 great towns was 4·26, being over 6·6 in Sheffield, Leicester, Birmingham, and Preston, and 8·31 in Hull; it was 7·35 in Wolverhampton. In the 67 other large towns the rate was 3·37. In the rest of England and Wales the rate was only 1·63. Considering that this includes many districts which though called rural are essentially of the same description as crowded town areas (such for instance as Willenhall, where Diarrhœa was very fatal) it is evident that if we could exclude these the Diarhœa death-rate in the truly country districts would be very small compared with the towns.

This is not due to the greater child population of the towns ; in the same Quarter the infant mortality was 278 per 1,000 births in the 33 great towns. In the 67 other large towns it was 241 ; in the remainder of England and Wales it was only 160.

Summer Diarrhœa is undoubtedly due to a bacillus whose vigour and virulence is developed by high temperature acting on some conditions found peculiarly in towns ; these conditions almost certainly include the presence of decomposing organic matter in and about the houses, and the lack of an abundance of fresh air and sunlight, both of which are inimical to the development of most bacilli. I will refer again to this in speaking of our sanitary condition. The apparent distribution of the epidemic in the Borough points to the same conclusion. We can only estimate the distribution of the disease by the deaths, and amongst the better-off classes these would probably be less in proportion to the cases owing to greater care and earlier treatment ; though I doubt if these would operate much, having found treatment neglected where I expected otherwise. I made a "spot map" of the deaths from Diarrhœal Disease during the year, and in many respects the results are interesting, and very instructive. All the main thoroughfares are almost free from deaths, *e.g.*, Darlington Street, Chapel Ash, Tettenhall Road, none ; Waterloo Road South and North, and Stafford Road, one death in the lower part of the Stafford Road ; Stafford Street, one death ; Cannock Road, one death ; Lower Stafford Street, none ; Victoria Street, Worcester Street, and Penn Road, one death in Worcester Street ; Dudley Street, Snow Hill, and Dudley Road, three deaths in Dudley Road. As a rule the deaths are evidently closest in the poorer and more crowded areas. In the rather small area bounded by Bilston Street, Piper's Row, Old Mill Street, and the Birmingham Canal, there were 54 deaths. In the small cluster of close streets lying opposite to the Board Schools at the commencement of the Willenhall Road, there were 16 deaths. In the small triangle of close streets bounded by Bilston Road, Chillington Street, and the L. & N.-W. Railway there were 15 deaths. Deaths were not so dense, but rather thickly scattered over the area of old property lying between Salop Street and Dudley Road ; and also on both sides of Stafford Road,

The most notable exception to the number of deaths in close property was the Blakenhall district, where there were only 9 deaths; but though many of the streets in Blakenhall are old and close, there are few courts or inhabited yards, and moreover the whole district stands very high and exposed to the wind, and has thus free æration. In the whole area lying between Tettenhall Road, Bath Road, Waterloo Road, Stafford Road and the Borough boundary, there were only 27 deaths. There were two areas where there were an unexpected number of deaths: in the block of quite new and open roads bounded be Fisher Street, Lime Street, Owens Road, and Lea Road, there were 8 deaths. In the block of fairly-well laid out property lying between Gordon Street and All Saints' Road there were 15 deaths; in many respects, however, this property is not ideal, being in parts too crowded at the back, and lying on a very suspicious subsoil.

BOROUGH HOSPITAL.

The Quarterly numbers dealt with have been as follows:—

Quarters.	Remaining in from previous Quarter.	Admitted for		Total Discharged		Died.		Average No. of days in of the cases admitted.	Average daily No. of Patients in Hospital.
		Scarlet Fever.	Small Pox.	Scarlet Fever.	Small Pox.	Scarlet Fever.	Small Pox.		
First ..	40	69	..	72	..	2	..	52·1	37·5
Second ..	37	60	..	63	..	5	..	46·4	33 7
Third ..	34	127*a*	..	102	..	11	..	42·7	52·3
Fourth ..	59	152*b*	..	150	..	4	..	47·5	76·0
Year ..	40	4 8	..	387	..	22	..	46	50

a.—6 from Bushbury.

b.—5 from Tettenhall; 1 from Bushbury.

Leaving 61 cases in at the close of the year.

First Quarter.— 69 cases were admitted for Scarlet Fever. Of these one was fatal—5 years old, severe stomatitis, gastro-enteritis, palatal paralysis, exhaustion; 55 days in. 15 cases were very severe, 12 severe. The complications were—Otorrhœa, 9 cases. Rhinitis, 7 cases. Albuminurea, 8 cases. Adenitis, 6 cases. Suppuration, 2 cases. Rheumatism, 4 cases. Pericarditis, 1 case. Chorea, 1 case. Stomatitis, 4 cases. Onychia, 5 cases. Pyæmia, 1 case. Cellulitis, 1 case. Ophthalmia, 1 case. 5 cases had severe acute Catarrh, probably Influenza. Two cases when admitted had Tinea Capitis with Impetigo; one case when admitted had very severe membranous sore throat, Diphtheritic Bacilli were found; the case subsequently peeled freely. One case was admitted with apparent Scarlet Fever on January 26th; on February 6th there was apparently a second attack, peeling lasted until March 23rd.

Second Quarter.—60 cases were admitted for Scarlet Fever. Of these 5 were fatal, the particulars were—A, $2\frac{1}{2}$ years old; severe attack, naso-pharyngeal mischief, toxæmia; 3 days ill. B, 4 years old; double adenitis, with suppuration, severe sloughing, albuminurea; 22 days in. C, 3 years old; very severe attack in a squalid, weakly child, toxæmia; 3 days in. D, 10 months old; measles, otorrhœa, pyæmic rash, convulsions; 53 days in. E, 7 weeks old; severe naso-pharyngeal mischief, with respiratory obstruction; 4 days in. Five other cases were very severe, and 12 severe. Complications —Otorrhœa, 9 cases. Rhinitis, 3 cases. Albuminurea, 5 cases. Adenitis, 5 cases. Suppuration, 3 cases. Rheumatism, 2 cases. Onychia, 1 case. There was one case of Measles, developed 10 days after admission, and probably infected before, it was the fatal case D. One case had severe secondary throat 30 days after admission.

Third Quarter.—127 cases were admitted for Scarlet Fever. Ten of these were fatal, the particulars were—A, $9\frac{3}{4}$ years old; very severe case, with toxic symptoms; died very suddenly, only 2 days in. B, $2\frac{1}{2}$ years old, very severe attack, adenitis and suppuration, septicæmia; 19 days in. C, 8 years old; nephritis, stomatitis,

uræmia; 26 days in. D, 7 years old; very severe attack, toxic rash, suppression of urine; 18 days in. E, 2 years old; very severe naso-pharyngeal mischief, toxæmia; 3 days in. F, 1½ years old; very severe attack, toxic rash; 16 days in. G, 2 years old; severe naso-pharyngeal mischief, adenitis, toxæmia; 13 days in. H, 2 years old; severe naso-pharyngeal mischief, toxic rash; 10 days in. I, 3 years old; very severe attack, toxæmia; 7 days in. J, 3 years old; adenitis, suppuration, septicæmia; 14 days in. 18 other cases were very severe, and 14 severe. Complications—Otorrhœa, 8 cases. Rhinitis, 7 cases. Adenitis, 12 cases. Suppuration, 8 cases. Albuminurea, 7 cases. Rheumatism, 2 cases. Onychia, 8 cases. Stomatitis, 3 cases. Eczema and Impetigo, 9 cases. Icterus, 3 cases. One case when admitted had severe heart disease, and post Diphtheritic paralysis. One case had severe axillary abscess from a wound of the finger before admission. One case admitted with apparent Scarlet Fever, when peeling freely 11 days afterwards had vivid rash and temperature; later had rhinitis and adenitis, and suppuration, 36 days after the second rash. The type of disease during this Quarter was peculiarly severe.

Fourth Quarter.—152 cases were admitted for Scarlet Fever. Of these 7 were fatal—A, 8 years old; severe naso-pharyngeal mischief and adenitis, toxæmia; 18 days in. B, 2 years old; very severe attack, toxæmia; 2 days in. C, 4 years old; toxic rash, stomatitis; 6 days in. D, 1½ years old; 12 days in, and E, 2½ years old; 19 days; both the same as A. F, 4 years old; albuminurea, sloughing stomatitis; 27 days in. G, 1½ years old; very severe case, toxic rash; 17 days in. 21 other cases were also very severe, and 14 severe. Complications - Otorrhœa, 14 cases. Rhinitis, 20 cases. Adenitis, 9 cases. Suppuration, 8 cases. Albuminurea, 10 cases; two had it on admission. Rheumatism, 3 cases. Onychia, 4 cases. Icterus, 1 case. Spinal Abscess, 1 case. Purpura, 1 case. Herpes, eczema, and impetigo, 9 cases. One case had Chicken-pox when admitted. This Quarter as well as last the type of case was of exceptional severity, although the mortality was fortunately not so high.

The following Table gives the proportion of cases without definite signs of Scarlet Fever when seen on admission, and the results :—

Quarters.	Total Admissions	Indefinite when admitted.				
		Total.	Apparently not had Scarlet Fever.			
			Total.	Safely Discharged	Caught Scarlet Fever	Died.
First ...	69	9	2	1	1	...
Second ...	60	10	7	4	3	1*a*
Third ...	127	16	4	3	1	...
Fourth ...	152	14	3	3	...	...
Year ...	408	49	16	11	5	1

a Scarlet Fever seven days after admission, died in three days.

The proportion of erroneous cases is rather small, and so is the proportion of these that caught Scarlet Fever in the Hospital; but it was a deplorable misfortune that one of these was fatal.

In all other respects the year has been a very fortunate one as regards freedom from the mischances that Institutions like the Borough Hospital are liable to.

Return Cases.—These cases of infection, apparently conveyed to their homes by patients discharged from the Hospital, do more than anything else to discredit Hospital isolation; in order that they may be clearly understood, I always give the particulars very fully. It must not be supposed that every case which occurs after a patient has come home is necessarily due to the latter; for instance, on two occasions during the year, we have had fresh cases occur in households one day, and on one occasion two days, before a former case had come home from the Hospital; had such fresh cases been a few days delayed

they would have been wrongly attributed to the cases from the Hospital. The following illustrate the same thing:—A case 48 days in, 51 ill, had had nasal eczema (a common source of infection); a fresh case occurred 62 days after the return home. A case 48 days in, 49 ill, no complications, a fresh case 37 days after return home. A case 82 days in Hospital, delayed by albuminurea and rhinitis, 35 days after return a fresh case occurred, 2 days later another, 11 days later another. A baby 15 months old, 35 days in, 36 ill; no complications; a fresh case 35 days after return home. None of these cases could have been infected from the Hospital cases, and yet, had the interval been shorter, this would have been suspected. Besides the above, fresh cases occurred after the return home of 30 patients, this is a large proportion out of 365, the total number who returned home during the year. The large number is, I think, partly due to the failure of our old dry heat disinfecting stove, partly to the large number of infective complications which we unfortunately had during the year, especially nasal discharges and skin affections. In April the old stove was replaced by a Thresh's Steam Disinfector, and we were very free from return cases until the onset of that bad type of disease which occurred in the latter half of the year. The following are the particulars of the 30 cases after which there were "returns":—(1) Case 53 days in, 57 ill, had had otorrhœa; 26 days later mother had Scarlet Fever; this appeared certainly not due to our case, but later it was stated that a baby had something resembling Scarlet Fever 13 days after our case went home; this may have carried on the infection, but the whole matter was very uncertain. (2) Case 60 days in, 64 ill; when admitted had tinea capitis with impetigo, this caused the long detention in hospital, clear when discharged but there was a slight scaliness in one nostril; after going home the nose began discharging; 17 days after return another case occurred. If this, as was probable, was due to our case, it would mean infectiveness lasting 81 days. (3) Case 51 days in, 53 ill; no complications; fresh case 16 days after return, was removed; 3 other children in the house remained free, though in contact with our case. This infection was probably from some other source. (4) Case 49 days in, 50 ill; had otorrhœa occasionally for years; fresh case 16 days after return; but

Scarlet Fever was being treated at home close by, one case for 19 days back (3 days before our case returned) and a second case for 12 days. Here it is at least as likely that infection was from the neighbours as from our case. (5) Case 44 days in, 47 ill; no complications; did not come home for a week after leaving Hospital; a few days after coming home mother noticed some running from nose; 15 days after leaving Hospital, 8 after coming home, a fresh case occurred, probably from the nasal discharge (62 days infectiveness). (6) Case 43 days in, 45 ill; no complications; fresh case 15 days after return, and another 16 days after that; this would suggest some other source of infection. (7) Case 48 days in and ill: no complications in Hospital, but after return home had nasal discharge and severe adenitis, kept apart for 11 days after coming home, then mixed with other children; fresh case in 4 days (15 after return, 63 from commencement of illness; this was probably from our case; yet the following is peculiar: our case died rather suddenly at home 14 days later (29 after return home) and 28 days after the death a fresh case occurred here. (8) Case 43 days in, 48 ill; minute crack at angle of mouth, kept away from home for 12 days, 4 days after returning home a fresh case occurred, 15 days after leaving hospital. Infection is rather improbable here. Another case occurred a week later, this may have been infected from the other. (9) Case 53 days in, 54 ill; had had otorrhœa, but nothing since coming out; mixed with a neighbour's large family without ill result; 7 days after return a child came from Birmingham, who had Scarlet Fever 8 days later; infection from our case seems rather improbable. (10) Case 45 days in, 48 ill; no complications; fresh case 13 days after return. (11) Case 46 days in, 48 ill; no complications; fresh case 12 days after return. (12) Case 47 days in, 48 ill; no complications in, said to have a sore on his nose since coming out, did not go home, but went to a house where the home washing is done; a fresh case occurred at home 12 days after he came out. (13) Case 51 days in, 54 ill; delayed by sore at corner of mouth, nothing since coming out; fresh case 11 days later. (14) Case 28 days in, 51 ill (ill at home 23 days before admission); no complications; fresh case 11 days after return. In the last five

cases infection from our cases is possible, but rather doubtful. (15) Case 48 days in, 50 ill; no complications; 2 fresh cases 10 days after return. (16) Case 36 days in, 50 ill; no complications except slight rheumatism; fresh case 9 days after return. In the last two instances I suspected defective disinfection in our old dry hot-air Stove. (17) Case 46 in, 48 ill; peeling over 12 days before going out, no complications; fresh case 9 days after return. (18) Case 47 days in, 50 ill; had eczema over ear, nothing when discharged, nor since; fresh case 9 days after return. In the last two instances infection from our cases seems probable, but there is nothing to explain it. (19) Case 46 days in, 47 ill; no complications, but after he came home had a cold in the head and nasal discharge; fresh case 8 days after return, possibly due to the nasal discharge. (20) Case 49 days in, 51 ill; no complications in, but had nose sore since coming out; fresh case 7 days later, probably due to the nasal sore. (21) Case 44 days in, 45 ill; no complications; mother says rather poorly since coming home; fresh case 7 days later. I suspected the old disinfecting Stove in this case. (22) Case 50 days in, 54 ill; rhinitis in, apparently well when discharged and nothing since; fresh case in 6 days; I suspect the nose. (23) Case 51 days in, 56 ill, delayed by onychia; well since coming out; fresh case 5 days later, but this child had been playing at another house where a case of Scarlet Fever had occurred 4 days before he was taken ill; this was the more likely source of infection. (24) Case 48 days in, 49 ill; no complications; 5 days after return a fresh case occurred, and two more on the day following. This infection was apparently from our case, but there was nothing to explain it. (25) Case 45 days in, 47 ill; no complications in, but nose has been bleeding since return home; a fresh case 4 days later. (26) Case 42 days in, 44 ill; no complications in, but nose discharging since return home; fresh case in 4 days. The last two cases of infection were most probably due to the nasal mischief. (27) Case 79 days in, otorrhœa off and on the whole time; had the same before; allowed home after caution to parent, who assured me there were no other susceptible children at home; a child staying at the house on a visit was taken ill in 4 days. (28) Case 39 days in, 41 ill; no complications; on going home was put to

sleep with a child who was taken ill in 4 days. We give a printed card of precautions with every case discharged, warning against close contact with other children for at least a week. The last two infections were most likely from our cases; but we can hardly be blamed for them. (29) Case 43 days in, 47 ill; no complications in, said to have had nasal obstruction and discharge immediately after return home; fresh case in 3 days, and another 6 days after that. Almost certainly due to the nose mischief. (30) Case 53 days in, 55 ill; 8 days before coming out had slight soreness in the nostril, 6 days later there was the least dry scaliness; went out apparently clear 2 days after that. On *the following day* another child had severe Scarlet Fever, and a week after another was taken ill. The mother told us our case had a "cold in the nose" since coming out. This infection certainly seemed due to our case, but the suddenness seems almost incredible. In connection with the above, page 21 of last year's report might be read.

METEOROLOGY.

(See Table 3.)

First Quarter.—The average temperature was very moderate; except during the third and fourth weeks there was no extreme cold, and there was practically no continuous frost. The changes both of temperature and air pressure were frequently extreme and sudden; and most of the time the damp was excessive.

During the first five weeks the winds were Easterly, and again at the close of the Quarter; from the sixth to the tenth week the tendency was South-West. There were very high winds on the 24th and 25th of February, the 11th, from the 17th to the 19th, and the 26th and 27th of March were very stormy.

The Rainfall was 7·07, rather above the average. Most of the rain fell in heavy showers, the intervals being as a rule, fairly bright and fine; but the first ten days were foggy and very dull.

The mean Humidity was 86.

The Barometer was exceptionally low during the 5th, 9th, 11th and 13th weeks; during most of the Quarter variations were extreme and rapid.

Second Quarter.—The weather was remarkably fine. There were four nights frost during the first week, which was cold; for the next four weeks the night temperature kept touching frost, but the mean temperature was mild; in the sixth week (ending May 15th) there were three nights rather severe frost; after that the night temperature became steadily milder and the days were very warm; the maximum shade temperature reaching 82°5 and 80°8 in the eleventh and twelfth weeks.

The wind as a rule was low, it was high (W. and S.W.) during the second week, and rather high (N.E.) during the seventh. The prevailing direction of the wind was West tending to North West, but it was very variable. The absencc of wind rendered it very close and oppressive at times.

There was a moderate Rainfall, 6·22 inches. Most of the rain was effective, falling in heavy showers, very frequently at night. There was a hailstorm on May 6th, and hail on two nights during the sixth week.

The mean humidity was low, 76.

The Barometer was moderately high and steady.

Third Quarter.—The high temperature of the closing weeks of the Second Quarter was maintained, the mean temperature (except during the week ending July 10th) being very high, the first week in August was excessively hot, the mean temperature for the week being 63°·7. The maximum temperature was on August 4th, 84°·9; the hottest days being the 4th and 5th, mean temperatures 68°·1 and 68°·2. The earth temperature was also excessive. The one foot deep temperature was above 60° from the middle of June to the end of August; and the weekly mean reached 65°·9 on the week ending August 7th. The weekly mean of the 4 ft. deep temperature was over 56° from July 17th to August 28th, the highest being 57°·7 during the second week in August.

The prevailing winds were West and South-West. During the second, third and fifth weeks there was a good deal of East wind. There was on the whole a lack of wind; during the first, fifth, and twelfth weeks there was nearly average wind; the seventh and eighth weeks were rather stormy; during the rest of the Quarter the wind was very low, and this intensified the heat.

The Rainfall was 7·36 inches; about an average amount. There were thunderstorms on the 4th, 5th and 6th of August; very heavy rain on August 8th, and heavy rain on September 29th.

The Humidity was 81, the air was very dry up to the middle of August, then rather damp.

The Barometer was moderately high as a rule, it was low and steady during the seventh, eighth and ninth weeks, high and variable for the rest of the Quarter.

Fourth Quarter. –The temperature was mild; there were a few slight frosts in the seventh and eighth weeks; the first few days in December were very cold, and from December 21st to the 25th was very cold, with rather sharp night frosts (lowest temperature 22·0). The weather was very fine, with occasional showers for the first five weeks, but October 28th and 29th were very foggy; there was considerable fog during the second and fourth weeks in November, and December the 18th and 23rd were very foggy.

From the third to the fourth weeks the prevailing wind was South-East, and also during the twelfth week; during the rest of the Quarter the prevailing direction was Westerly, mostly South-Westerly. There was a severe storm on November 28th, and the tenth week was rather stormy; during the eleventh and thirteenth weeks the wind was very high, December 29th being very stormy.

The total rainfall was very moderate, 6·17 inches. The second week was showery; there were heavy showers during the sixth, seventh, ninth, tenth, and eleventh weeks. There was a very little snow at times during the thirteenth week.

The Humidity was 92, after the first week the damp was very great.

The variations in the Barometer were extreme, as a rule, especially considering the amount of moisture in the air, it was very high.

Explanatory Remarks on the Tables.

The Returns made by the Registrar for the East Sub-District include all deaths occurring in the General Hospital and Workhouse; many of these are from outside the Borough, a few are returned as "no home," the others are of persons from the East and West Sub-Districts. Throughout the Tables the few cases returned as "no homes" are included in the East figures; the deaths from outside the Borough are excluded altogether (except in the uncorrected figures in Table 8), and the deaths from the East and West are referred to their own Sub-Districts. Particulars of these deaths in the Hospital and Workhouse are given in Table 7. In Table 8, the comparison between the Sub-Districts in all years before 1884 is misleading, as the East deaths include many really belonging to the West; the second row of figures in each year since 1884 are the corrected returns, the first row (given to compare with former years) are the Returns as sent in by the Registrars.

Table 10 gives our comparison with the other 32 great towns. The third column in this Table does not give the actual death rates, but the rates corrected for the age distribution of the populations. The death-rate varies in the different age decades, for instance, is very high under 5 years and over 60 years; comparatively low between 20 years and 40 years. Thus a district whose population consisted of persons under 5 years and over 60, with a death-rate of 40, might be far healthier (as far as death-rate is an index of health) than a district whose population was between 20 and 40 years, with a death-rate of 10. In the third column in Table 10 the rates are what they would have been had the age distribution in each town been the same as in England and Wales, and are therefore a much more accurate comparison than the actual death-rates.

Vital Statistics.

The fatality from Summer Diarrhœa is so excessive that it overrides and obscures all other returns; our child population is a high one, and this renders us rather susceptible to Summer Diarrhœa. This is shown in the Annual Summary in Table 10. Only seven of the great towns exceed our death rate (corrected 23·07), the average of the towns being only 20·65. Our Diarrhœa death rate (2·11) is only exceeded by two of the towns (Preston and Hull), and is more than double the average of the 33 towns, 0·92. Our Diphtheria death rate (0·62) is the highest of the towns, average 0·31. Scarlet Fever is low in almost all the towns, average 0·18, our rate (0·24) is exceeded by six of the towns. Measles and Whooping Cough have caused an average fatality. The result gives us a high Zymotic death rate, 4·22, town average 2·87, only two exceeding us. Our child death rate is (from the above causes) a very high one, 217; town average, 177; we are slightly exceeded by two, and greatly exceeded by Preston, which had an unfortunate combination of severe epidemics of Measles and Diarrhœa. One noteworthy fact in connection with the Town Summary is the following:—Small Pox, Measles, and Scarlet Fever are the only Zymotic diseases common in our country which are alike in their generally infective character. Of these, Small Pox (unmodified) is far the most deadly, Scarlet Fever next, Measles is of such slight fatality that it is difficult to persuade people that it is of any importance at all. Of these, Small Pox, controlled by vaccination and isolation, caused only 18 deaths in the 33 towns during the year, a number *too low* to give a death rate of even 0·005, so that Small Pox is omitted in my Table. Scarlet Fever, controlled by isolation, caused 1,967 deaths, equal to a rate of 0·18. Measles, practically uncontrolled, caused 6,049 deaths, rate 0·55; three times that of Scarlet Fever. These figures need no comment.

Our comparison with past years is not a satisfactory one. The returns from Respiratory Diseases are *very* low (see Table 9), much the lowest recorded, in spite of our increased population. This modifies our total rate. This low return is, of course, partly due to the absence of severe weather, but we may hope it is in part due to

the better houses (drier and more airy) which are being built in such numbers and as quickly inhabited ; and it is probably, too, in part due to better trade, causing better clothing and feeding. Excepting Diarrhœa, there is nothing serious amongst the Zymotic returns, but none are very low, and Measles and Diphtheria are considerably above the average. This all contributes to undo the effect of the low Respiratory deaths, and the addition of the terrible Diarrhœa fatality gives us a high death rate, one a little higher than the average for the previous ten years. Probably had we a orrect estimate of our population, our death rate would be well below the average (see remarks after the Statistical Summary on the second last page).

The contrast between the two Sub-Districts, as shown in some detail in Table 5, is always rather instructive. In the West we find a rather high death-rate, 18·2, one certainly 3 or 4 higher than an ideal one. The First Quarter is slightly high ; the causes being Diphtheria and Respiratory Diseases ; the weather although mild was very variable, and damp ; there was some presence of Influenza which would increase the Respiratory Diseases. The Fourth Quarter is rather worse, Diphtheria worse, some Measles deaths, but no deaths from Influenza ; Respiratory deaths rather worse, probably due in part to Measles. The Second Quarter is as low a death-rate (13·8) as we could expect. But the Third Quarter is terribly high, due to Diarrhœa deaths, occurring mainly in the poor and crowded area between Salop Street and Dudley Road. The yearly death-rate in the East is terribly high, almost half as much again as the West ; this is a very momentous fact. It means that had the West been as bad, about 400 more lives would have been lost during the year ; or, as it was about 340 deaths in the East during the year were due to the difference between that Sub-District and the West, although the West was in some respects so bad. The main causes of the East excess are Diarrhœal Diseases (Table 4, East 176, West 143 ; Table 5, giving Diarrhœa only, does not show this) and most of all Respiratory Diseases, East 206, West 118. In other Zymotic Diseases the West actually exceeds the East ; although hardly more than its greater population would account for. Looking at the Quarterly details in

the East (we see that in the lowest Quarter, the Second, the death-rate is very high, the Respiratory being very high (higher than any in the West except the Fourth, in the First Quarter Respiratory deaths are more than double the West, in the Fourth nearly double. In the Third Quarter the Summer Diarrhœa comes in (Diarrhœal deaths Table 4, East 146, West 122) giving an appalling death-rate of 34·7 in the East.

It is evident that there are two matters that need consideration, the Respiratory Diseases, which, *even this year, the most favourable as regards them that we have ever had*, have such a potent effect in raising our death-rate, especially in the East; and the Diarrhœa, which is at times so terribly fatal. The 1897 epidemic was so severe that it scarcely needs to emphasize its importance, but I may point out that it caused about one-sixth of our total deaths from all causes in the year, and that nearly all this mortality occurred during only one Quarter of the year; during thirteen weeks in the East (July 17 — October 9) Diarrhœal deaths were 149, in the West during twelve weeks (July 31—October 16) they were 125.

SANITARY CONDITION.

Remarks on our sanitary condition must obviously be in great part a repetition of former Reports; I should like particularly now to refer to and emphasize what I said in the 1896 Report. Many were inclined to believe those remarks were exaggerative; their accuracy is grimly confirmed by the deadly statistics of the present year. The reason why insanitary conditions are not always appreciated by those unacquainted with technicalities is because they do not see the importance of apparently little things; and thus many of our requisitions appear to them needless or at least very extravagant. Why do we regularly have such a high fatality from Respiratory Diseases? Partly because we have so many poor who are ill-clothed and ill-fed; sanitation cannot deal with that; partly because so many of our people live in houses which are thoroughly damp, and which have no proper facility for ventilation, and, even if they had, have no

fresh air about them. It is more and more recognized that the real cause of chest ailments is not mere cold but foul air, and especially air fouled with animal exhalations. Many of our poor live in damp cottages, with small rooms, which for warmth's sake are kept close and stuffy; fancy the condition of such a room after several people have spent the night in it with practically no ventilation. Even when open to the air and empty during the day these rooms have the rank smell characteristic of organic exhalation. When numbers of such rooms are in such close vicinity that their thorough ventilation by the wind becomes defective, and the air stagnates in the yards and courts around them, then the evils are intensified. When there is also absence of sunlight matters are at their worst These are the conditions which cause deaths from consumption and chest affections; and which moreover, cause a state of defective health of which even the sufferers themselves are unaware until they escape from it and feel the difference, a state which renders them ready victims to almost any form of disease, and which, even if actual disease is escaped, renders their lives lacking in due enjoyment and utility.

We have this year done much in the way of closing houses unfit for habitation (see Table D). This Table attempts to define the chief causes of condemnation, but in most instances so many causes exist that it is difficult to draw up a Table. Broadly speaking, we condemn houses on two grounds, deficiencies existing in themselves, generally quite irreparable; or the conditions of their surroundings, still more irreparable; usually, of course, both conditions co-exist. Some houses, where mere dilapidation or defective structure is the main cause of closure, are through their open situation suitable for residing in during fine weather; others, even in fairly good repair, are unfit because they have deficient air space. The latter is really the gravest defect. A gipsy in a ragged tent in the open is more healthily housed even in winter than those in such houses as the above. Yet these are those whose closure is most objected to. It is also objected that these poor people have nowhere else to go to. I am fully alive to this, the following extract is from my 1896 Report:—"Then it will be fully "evident that nothing short of doing away with this class of house "altogether would really satisfy the needs of sanitation. This must

"be ultimately done, but for the present it is, of course, impossible. "We can only proceed gradually, dealing at first with those houses "which are in the worst situations, or whose bad repair gives extra "ground for closing them. This we are continually doing.

"The result is not as beneficial as it might be; first, because in "most instances the empty houses remain standing, obstructing "ventilation, and affording facility for accumulating filth, and next, "because it is always doubtful if the condition of the people turned "out is bettered. In spite of the vast amount of new property built "in the Borough, there is no additional accommodation for the very "poor, for it does not pay to provide it. Until this problem is solved, "the gravest sanitary defect of our and other large towns will remain."

I think it is pretty clear that the time for facing this problem is drawing near.

The Diarrhœa epidemic points also to the importance of apparently little things. It is a disease of the towns, how do they differ from the villages? Even in our own town this year's deaths plainly show that (as a cause of death) Diarrhœa is practically limited to our older and crowded areas. How do they differ from the newer and more open areas? The answer in general terms is obvious. The main difference in each case is in the supply of fresh air. There must be less æration in the streets of a town, especially the narrower ones, and least of all in the yards and courts, than in any open area; and in order to counterbalance this defect, the greatest care should be taken to lessen all possible causes of air impurity.

From what has been said above under the heading of Diarrhœa, it is equally obvious that to lessen this disease all decaying matter should be got rid of, and cleanliness of walls, yards, and courts strictly observed. Such cleanliness is impossible in many of our older properties; and the endeavours to have such alterations made (such as paving and relaying yards and courts, and passages, repairing rugged walls, doing away with untidy ash-pits) as would expedite general cleanliness, often appear trifling and unimportant. Yet it is only by constant attention to such and similar apparent trifles that

the health of the poor in a town like ours can be even fairly maintained. As the success of all our efforts depends on the amount of support which they receive from the public conscience, it is most important that these matters should be generally known and understood.

SANITARY INSPECTION REPORT.

It was hoped this year that a full report of the work of the Inspectors would be appended to this Report of the Medical Officer ; prolonged illness has rendered this impossible, but the Tables, which follow after those of this Report, will give a very satisfactory account of the work being done.

Statistical Summary, 1897.

	East Sub-District.	West Sub-District.	Borough.
Area—Acres	828	2,697	3,525
Population*	39,306	48,229	87,287
Density—No. of persons per acre	47·4	17·8	24·7
Inhabited Houses			about 18,500
Rateable Value—Total exclusive of Government Property			£338,755 0s. 0d.
Marriages			No. 886 Rate 10·2

	East Sub-District.		West Sub-District.		Borough.	
	No.	Rate	No.	Rate	No.	Rate.
Births	1,543	39·3	1,511	31·4	3,054	35·1
Deaths	1,022	26·0	878	18·2	1,900	21·8
Zymotic Deaths	188	4·7	214	4·4	402	4·6
Infantile Mortality Deaths under 1 year per 1000 births	235		203		219	

*Estimated to the middle of 1897, the Borough is not quite the sum of the Sub-Districts being estimated separately. The Estimate is on the supposition that the rate of increase from 1891 to 1901 is the same as from 1881 to 1891; this is certainly not the case; judging by our numerous new streets our increase in population must be far greater than the above estimate, probably some thousands greater. This would lower all our rates.

Index of Tables.

TABLE No. 1.

Cases of Infectious Diseases recorded in 1897.

		East Sub-District. Population 39,306.					West Sub-District. Population 48,229.					Borough. Population 87,287.					Totals:			Rate per 10,000 of Population.		
		1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.	East Sub-District	WestSub-District	Borough.	East Sub-District	WestSub-District	Borough.
Small Pox ..	Under 5 years ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	5 years & upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
Measles ..	Under 5 years ..	13	72	57	120	262	2	56	87	135	280	15	128	144	255	542	455	455	910	115·7	94·3	104·2
	5 years & upwards	19	56	39	79	193	9	34	66	66	175	28	90	105	145	368						
Scarlet Fever	Under 5 years ..	11	18	13	22	64	12	7	31	34	84	23	25	44	56	148	219	310	529	55·7	64·2	60·6
	5 years & upwards	38	25	45	47	155	28	26	65	107	226	66	51	110	154	381						
Diphtheria ..	Under 5 years ..	5	9	16	12	42	14	15	12	25	66	19	24	28	37	108	121	190	311	30·7	39 3	35·6
	5 years & upwards	27	18	17	17	79	27	30	30	37	124	54	48	47	54	203						
Typhoid Fever	Under 5 years ..	..	..	3	..	3	1	..	1	..	2	1	..	4	..	5	51	45	96	12·9	9·3	10·9
	5 years & upwards	7	8	22	11	48	11	6	18	8	43	18	14	40	19	91						

TABLE No. 2.

WEEKLY RETURNS under the Infectious Diseases Notification Act, and prevalence of certain other Diseases.

A few cases x Prevalent xx Very Prevalent xXx

1897 Week Ending	Small Pox	Scarlet Fever	Diphtheria	Typhoid Fever	Puerperal Fever	Measles	Whooping Cough	Pneumonia	Influenza
January 9th...	...	8	3	1	...	...	x	xx	x
,, 16th...	...	3	3	1	1	x	x	xx	x
,, 23rd...	...	3	6	...	...	x	x	xx	xx
,, 30th...	..	11	15	3	...	x	xx	xx	xx
February 6th...	..	8	4	3	...	x	x	x	x
,, 13th...	...	9	7	1	...	...	x	x	x
,, 20th..	...	7	10	3	...	x	x	x	...
,, 27th...	...	8	7	2	...	x	x	x	...
March 6th...	...	6	4	...	...	x	x	x	x
,, 13th...	...	12	6	1	...	x	x	x	x
,, 20th...	...	8	2	1	...	x	x	x	x
,, 27th...	...	4	2	1	...	x	x	x	x
April 3rd...	...	5	3	3	...	x	x	x	x
,, 10th...	...	2	7	2	...	x	x	x	x
,, 17th...	...	11	8	...	...	x	x	x	x
,, 24th...	...	7	4	3	1	x	x	x	x
May 1st...	...	3	5	1	...	x	x	x	x
,, 8th...	...	2	4	..	...	x	x	x	x
,, 15th...	...	6	5	1	...	xx	x	x	x
,, 22nd ..	...	13	3	1	...	xx	x	x	x
,, 29th..	...	3	8	2	...	xx	x	x	x
June 5th...	...	13	5	2	..	xx	x	x	x
,, 12th .	...	5	4	...	...	xx	x	x	x
,, 19th...	...	4	9	1	...	xx	x	x	x
,, 26th...	...	6	2	...	...	xx	x	x	x
July 3rd...	...	5	9	2	...	xx	x	x	x
,, 10th..	...	12	8	...		xx	x	x	x
,, 17th...	...	5	4	1	...	xx	x	x	x
,, 24th .	...	14	7	4	...	xxx	x	x	x
,, 31st .	...	9	8	2	...	xxx	x	x	x
August 7th...	...	8	3	...	...	xxx	x	x	x
,, 14th...	...	14	4	6	...	xxx	x	x	x
,, 21st...	...	13	7	5	...	xx	x	x	...
,, 28th...	...	15	5	3	1	xx	x	x	...
September 4th...	...	14	5	4	...	xx	x	x	...
,, 11th...	...	11	3	6	...	xx	x	x	...
,, 18th .	...	10	7	7	...	xx	x	x	...
,, 25th...	...	16	8	2	...	xx	x	x	...
October 2nd...	...	12	6	6	...	xx	x	x	...
,, 9th...	...	17	5	3	...	xx	x	x	. .
,, 16th ..	...	23	9	2	...	xx	x	x	...
,, 23rd...	...	23	7	4	...	xx	x	x	...
,, 30th...	...	28	9	...	...	xx	x	x	...
November 6th .	...	28	9	4	...	xx	x	x	...
,, 13th..	...	20	4	1	...	xx	x	x	...
,, 20th...	...	14	8	2	...	xx	x	x	...
,, 27th...	...	14	10	...	...	xx	x	xx	...
December 4th...	...	9	14	1	...	xx	x	xx	..
,, 11th...	...	10	6	...	...	xx	x	xx	x
,, 18th..	...	13	3	1	...	xx	x	xx	x
,, 25th...	...	8	6	...	...	xx	xx	xx	xx
January 1st...	...	11	2	2	...	xx	xx	xx	xx
YEAR ...	...	543	312	101	3				

Tables 1 and 2 do not tally; 1 including a few cases not reported by Doctors, and 2 including some cases which ultimately proved incorrect.

TABLE No. 3.

Weekly Meteorological Report, from observations taken at 9 a.m. daily.

Week ending		Barometer Reduced to 32° and Sea Level		Humidity	Temperature					Rain	Wind		Death Rate per 1,000 per annum
								Earth					
		Mean	Range		Max.	Min.	Mean	1ft.	4ft.		Prevailing Directions	Total in Week	
1897		in.	in.	0-100	o	o	o	o	o	in.		mls.	
January	9th	29·840	·538	93	44·0	28·5	35·7	38·3	43·7	1·15	SE	1845	20·3
,,	16th	29·903	·598	95	39·5	23·6	31·7	37·8	43·4	·06	NE	579	23·9
,,	23rd	29·968	·619	?	35·6	18·0	28·5	34·8	42·8	·05	NE	1214	20·3
,,	30th	29·813	·840	?	39·0	14·0	29·6	34·2	42·1	·30	NW	1058	27·4
February	6th	29·517	·518	98	43·0	28·5	33·4	35·3	41·4	2·19	SE, E	987	20·3
,,	13th	30·049	·387	89	55·0	30·2	38·9	38·5	41·2	·12	SW	1185	19·7
,,	20th	30·246	·548	90	52·8	28·0	42·7	41 6	41·9	·89	SW	1439	18·5
,,	27th	30·331	·508	82	56·2	30·7	44·2	44·5	42·9	...	SW	2021	20·9
March	6th	29·561	·740	85	48 8	29·3	37·8	41 0	43·7	·77	N, SW	1996	20·9
,,	13th	29·846	·606	77	49·3	28·5	38·0	40·9	43·5	·31	S SW	1591	17·9
,,	20th	29·491	·829	84	53·4	31·8	41·9	42·4	43·4	·73	SW	2041	24·5
,,	27th	29·808	·443	79	66·0	40·2	49·0	46·8	44·1	·18	SW, NW	2375	22·1
April	3rd	29·420	·535	81	53·0	21·9	36·8	44·2	45·0	·32	NW, NE	1694	20·9
,,	10th	29·860	·577	79	52·0	23 9	36·9	42·5	44·9	·37	SE, SW, NW	1240	19·1
,,	17th	29·864	·609	79	57·2	30·6	43·3	45·4	44·8	·75	SE, W. SW	2069	13·1
,,	24th	29·891	·530	76	55·0	31·3	41·7	47·0	45·4	·60	SW, SE, E	1637	17·3
May	1st	29·870	·307	87	65·1	33·5	46·9	48·9	46·0	·21	SE, SW, NW	1235	13·7
,,	8th	29·928	·367	70	66 3	30·7	45·3	50·1	46·9	·11	W	1620	19·1
,,	15th	30·149	·476	65	60·0	26·7	41·6	50·2	47·6	·27	NW, N	1085	16·1
,,	22nd	30·132	·520	63	68·6	33·9	49·9	54·5	48·1	...	NE	1793	16·1
,,	29th	29·604	·615	73	67·8	33·9	49·2	55·4	49·5	·74	NW, SW	1032	18·5
June	5th	29·978	·422	80	75·4	43·0	54·8	57·2	50·4	·43	SW,NW	810	19 1
,,	12th	30·106	·492	81	79·7	36·8	53·6	58·1	51·5	·95	NE, SW	1104	14·3
,,	19th	29·943	·911	73	82·5	38·2	53·2	60·5	52·2	·85	SW, W, NW	1647	16·7
,,	26th	30·012	·457	82	80·8	47·5	58·6	60·4	53·0	·13	SW. NW, E	1088	17 9
July	3rd	30·002	·260	80	75·8	47·8	59·7	63·7	53·9	·81	N, NW	856	17·9
,,	10th	29·931	·510	69	70·3	33·6	53·9	62·6	55·1	·10	NW	1319	17·9
,,	17th	30·140	·484	67	81·4	42·0	58·8	63·6	55·5	...	E, N	933	23·3
,,	24th	29·867	·475	75	78·4	48·1	59·8	63·1	56·3	·40	SE, E, W	831	19·1
,,	31st	30·018	·528	78	78·0	50 0	59·7	63·4	56·5	·22	W, NW	984	28 7
August	7th	29·947	·527	68	84·9	46·1	63·7	65·9	57·1	·75	E, SE	1012	34·0
,,	14th	29·822	·205	80	73·0	43·5	57·7	62·6	57·7	1·23	SW	960	34·6
,,	21st	29·622	·358	85	70·0	46·1	56·9	61·2	57·3	·60	SW	1361	52·0
,,	28th	29·675	·274	89	67·7	45·5	55·0	60·2	57·2	·45	W, SW	935	32·2
September	4th	29·677	·478	90	67·0	35·3	51·1	58·2	56·7	1·45	SW	1590	33·4
,,	11th	30·050	·706	83	63·6	29·6	50·3	55·2	55·9	·45	NW, E	?	31·0
,,	18th	30·184	·807	91	67·0	34·2	51·1	56·5	55·3	·10	N, NW	?	25·7
,,	25th	29·862	·421	82	64·7	34·8	50·4	54·5	54·9	·23	N, SW	1391	20·3
October	2nd	30·055	·493	91	68·2	40·5	52·9	55·4	54·4	1·38	SW	679	21·5
,,	9th	30·347	·261	84	56·7	31·9	44·9	51·7	54·1	·03	NW, SW	859	24·5
,,	16th	29·808	·711	92	60·8	32·9	47·4	50·3	53·2	·48	W, S	1358	18·5
,,	23rd	30·321	·794	90	65·2	33·8	49·9	51·9	52·6	·27	S, E	1118	22·1
,,	30th	30·237	·183	96	61·9	36·6	45·7	49·1	52·3	·04	SE	1035	25·7
November	6th	30·326	·149	91	53·2	37·9	43·7	47·7	51·6	...	SE, E	1283	21·5
,,	13th	30·086	·764	98	56·8	33·2	46·4	48·5	50·9	·62	SE, SW	1243	16·7
,,	20th	30·192	1·090	95	55·0	26·2	42·8	47·1	50·6	1·10	SW	1131	15·5
,,	27th	30·438	·731	98	53·0	28·6	40·0	45·7	50·1	·31	SW, NW	782	19·1
December	4th	29·841	·899	90	50·2	24·1	35·5	40·6	49·1	·89	NW, SW	1647	20·9
,,	11th	29·651	·827	92	52·6	29·3	38·2	40·2	47·7	·85	SW	1968	23·3
,,	18th	29·752	·856	94	54·5	27·7	43·1	42·1	46·7	1·08	SW	1738	17·9
,,	25th	30·472	·316	88	44·0	22·0	34·1	39·7	46·5	...	SE	1214	14·9
January	1st	29·594	1·151	92	51·8	28·7	41·3	40·6	45·6	·50	SW	2099	23·3

Total Rainfall in the year, 26·82 inches.

TABLE No. 4.—Weekly Returns of Deaths in the Sub-Districts.

EAST SUB-DISTRICT.

Week ending		January.				February.				March.				April.				May.					June.				July.					Angust.				September				October.					November				December					1897.
		9	16	23	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25	1/1	Totals.
Measles	Under 5 yrs.	1	...	..	...	...	...	...	..	...	1	...	..	...	..	...	...	...	1	...	...	.	...	1	.	..	2	...	...	...	...	3	.	2	...	1	...	3	..	...	...	1	1	...	...	1	...	...	...	...	2	...	1	21
	5 & upwards	...	...	...	.	.	...	..	...	...	..	..	.	..	..	...	...	...	...	..	...	...	...	...	...	..	..	...	...	.	.	...	...	..	..	...	..	1	...	.	.	.	..		...	...	...	...	...	..	...	1
Scarlet Fever	Under 5 yrs.	...	...	...	..	...	..	...	...	...	.	1	..	...	...	...	1	...	1	...	..	1	...	...	1	..	...	..	..	..	1	...	..	1	...	..	1	...	..	..	.	...	...	...	.	...	.	...	.	1	...	..	...	9
	5 & upwards	1	1	...	..	...	...	...	...	...	...	..	...	.	..	..	...	1	...	..	..	...	...	...	...	...	...	...	...	...	...	.	...	1	...	...	...	...	...	...	.	.	...	...	...	...	...	...	...	...	...	...	4
Whooping Cough	Under 5 yrs.	...	...	1	4	...	1	1	1	...	...	...	..	...	...	1	...	...	...	...	...	..	...	...	1	..	...	...	1	1	1	1	1	..	..	1	1	...	...	.	..	1	...	...	.	...	..	...	.	...	...	18
	5 & upwards	...	.	..	...	.	...	...	...	...	...	..	...	...	..	.	...	...	..	.	...	...	...	...	...	..	...	...	...	...	..	...	.	...	.	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	Under 5 yrs.	...	...	...	...	.	...	.	...	...	...	...	...	.	..	.	...	...	1	...	...	2	...	...	...	...	...	.	...	...	...	...	...	2	...	.	...	.	...	.	2	.	...	.	1	...	1	.	2	...	1	...	1	13
	5 & upwards	...	...	...	...	...	...	...	1	.	...	..	...	...	.	1	...	...	...	..	...	1	...	..	...	1	...	...	...	2	..	...	...	..	.	1	...	...	...	...	...	..	...	1	...	...	...	...	...	...	...	...	...	8
Typhoid Fever	Under 5 yrs.	...	...	.	...	...	...	...	...	.	...	...	..	..	.	...	..	...	...	...	...		...	...	...	...	...	...	...	...	...	..	...	...	...	.	.	...	...	1	...	..	...	...	...	...	...	...	...	...	...	...	1
	5 & upwards	...	...	...	...	1	...	.	...	...	...	..	...	.	..	...	...	...	..		...	...	...	...	...	...	...	...	...	...	...	...	.	...	...	...	...	...	1	1	4	...	...	1	.	...	.	...	...	...	...	8
Diarrhœal Diseases	Under 5 yrs.	.	...	...		1	...	...	...	1	...	...	...	.	1	..	...	1	1	2	1	...	...	...	...	...	...	2	3	4	13	12	12	23	18	19	11	8	7	8	5	...	1	2	...	3	1	..	...	2	1	.	2	165
	5 & upwards	...	...	...	...	...	...	..	...	...	1	.	...	...	...	1	..	...	..	..	...	...	...	..	..	...	...	...	...	...	1	2	.	1	...	...	...	1	...	1	...	1	1	..	...	.	1	..	...	.	...	...	...	11
Phthisis	Under 5 yrs.	...	...	...	1	...	1	...	...	...	...	...	...	2	.	...	1	...	..	1	...	...	...	...	...	..	1	...	...	...	1	..	.	..	...	.	...	.	...	...	...	..	...	...	...	...	...	...	...	...	...	8
	5 & upwards	2	...	2	2	...	1	2	1	..	...	3	1	1	4	...	1	...	...	2	...	1	2	...	...	2	...	1	.	..	.	2	..	1	..	.	1	1	1	2	1	3	1	...	1	.	...	...	1	...	...	1	44
Respiratory Diseases	Under 5 yrs.	1	3	2	3	1	2	4	...	1	1	3	2	3	1	2	...	...	2	1	1	3	2	1	1	1	2	1	.	..	3	...	2	..	.	1	1	.	1	2	4	2	3	1	4	5		6	3	6	2	5	4	99
	5 & upwards	3	3	2	3	2	2	7	3	1	2	6	5	7	2	...	2	1	5	...	1	1	3	1	1	1	2	...	2	1	2	2	...	2	2	1	...	2	..		3	3	1	3	1	1	.	1	1	3	5	2	3	107
All Causes	Under 5 yrs.	7	8	9	11	8	11	7	3	9	5	7	7	11	6	8	5	3	12	6	4	8	7	4	6	4	12	9	11	12	22	20	18	31	24	28	22	16	9	13	14	8	7	4	8	12	5	8	8	11	10	11	10	539
	60 & upwds.	2	2	5	10	4	6	6	8	3	5	9	3	2	6	2	2	6	7	3	3	1	5	3	2	1	2	2	3	1	3	5	2	5	2	3	4	4	5	.	4	...	4	6	1	3	4	1	2	4	7	4	4	191
	All Ages	18	18	21	25	19	21	19	18	19	13	26	18	22	20	15	16	15	23	14	10	15	19	13	11	13	17	15	20	18	29	32	22	45	30	33	32	26	17	20	28	18	16	18	14	18	11	13	16	18	19	16	19	1022

WEST SUB-DISTRICT.

Measles	Under 5 yrs.	...	...	1	...	...	...	...	...	...	.	..	...	.	...	...	1	..	...	...	1	1	1	2	...	1		2	.	2	...	1	...	.	...	.	..	...	..	1	.	.	3	3	3	1	...	..	1	1	...	..	...	26
	5 & upwards	...	..	...	..	...	...	...	...	...	...	...	...	.	..	...	..	...	...	...	..	...	..	.	...			...	.	.	...	...	...	...	...	...	...	...	...	.	..	...	..	1	...	.	...	...	...	.	...	...	...	1
Scarlet Fever	Under 5 yrs.	...	...	...	...	..	...	1	.	.	...	...	..	...	...	...	...		...	..	...	...	...	...	1		...	...	...	..	...	1	...	.	...	...	...	2	...	1	1	..	...	...	...	...	1	..	...	...	...	...	8
	5 & upwards	.	...	...	...	...	...	...	..	...	...	...	...	...	...	...	.	.	..	...		..	..	..	...	...	...	1	..	.	...	.	..	1	...	.	...	...	...	...		...	.	1	..	...	...	...	...	...	...	...	3
Whooping Cough	Under 5 yrs.	...	1	1	...	1	...	...	1	...	1	..		...	...	...	..	...	...	...	...	1	...	2	...	1	1	1	.	2	...	2	...	..	1	...	...	...	.	..	...	...	..	..	...	...	.	1	1		1	2	21
	5 & upwards	...	...	.	...	...	...	...	...	...	...	.	.	.	.	...	..	..	...	...	...	.	...	..	...	..	..	..	...	.	...	...	..	...	...	...	..	.	.	..	..	..	...	...	...	...	.	...	.	...	...	...	...	...
Diphtheria	Under 5 yrs.	...	1	...	2	1	...	1	..	...	...	.	...	...	...	.	...	1	...	1		.	.		1	.	...	..	..	...	...	1	1	...	2	..	1	...	.	..	1	.	...	1	1	2	3	...	2	...	26
	5 & upwards	...	...	...	1	...	2	...	1	1	...	.	...	..	..	...	...	..	.	...	...	...	...	1	...	...	.	..	..	.		.	...	.	...		...	.	..	...	..	...	...	2	..		1	..	...	...	2	...	...	11
Typhoid Fever	Under 5 yrs.	...	...	.	...	...	...	...		...	..	...	..	...	.	.	...	...	.	..	...	...	...	...	.	...	..	...	...	...	...	...	...	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	5 & upwards	1	...	.	...	1	...	.	...	1	.	...	...	...	...	...	.	...	...	1	..	.	...	...	...	...	1	.	.	1	1	1	...	1	...	...	...	...	...	...	...	1	.	1	..	1	..	..	...	...	...	...	12
Diarrhœal Diseases	Under 5 yrs.	...	1	...	...	...	..	...	...	...	1	..		...	2	1	1		...	..	2	...	.	...	...	1	...	.	2	...	9	11	25	26	15	11	6	3	5	5	3	2	...	2	1	..	1	...	..	1	..	...	1	138
	5 & upwards	...	...	...	.	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...		...	...	...	...	...	.	..	.	...	1	.	...	...	1	1	1	...	...	...	.	.	1	...	..	...	...	...	...	.	5
Phthisis	Under 5 yrs.	...	...	...	...	..	..	...	...	...	...	...	..	..	.	...	.	.	..	..	...	...	...	..	..		...	...	..	.	.	...	.	...	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	5 & upwards	...	1	2	3	1	...	1	..	1	1	3	1	2	...	..	1	...	1		...	...	3	...	2	...	...	...	3	...	2	1	1	...	1	...	..	1	1	3	..	1	.	2	1	...	1	3	3	.	1	1	2	51
Respiratory Diseases	Under 5 yrs.	1	1	...	...	1	2	1	2	...	3	...	2	.	1	...	1	..	.	.	...	1	..	2	...	1	..	1	3	1	1	1	1		2	1	1	3	2	..	2	6	2	1	1	...	2	2					54
	5 & upwards	2	2	2	4	3	2	...	...	1	...	2	1	2	2	1	...	2	1	...	3	1	1	..	3	...	1	2	2	.	.		...	...	...	.	...	3	1	.	...	1	4	3	2	1	...	...	2	2	3	..	2	64
All Causes	Under 5 yrs.	5	8	4	7	7	6	4	3	5	7	2	9	5	8	2	6	2	1	6	7	8	4	6	8	7	8	7	6	7	14	16	30	34	18	17	12	11	9	12	8	6	10	10	10	5	11	8	8	12	1	5	8	440
	60 & upwds.	6	7	5	5	3	2	3	6	3	4	5	4	1	3	3	3	5	4	2	4	1	4	1	3	5	3	2	6	4	2	4	4	3	2	3	1	3	5	.	1	3	4	6	3	2	..	3	4	5	2	1	5	173
	All Ages	16	22	13	21	15	12	12	17	16	17	15	19	13	12	7	13	8	9	13	17	16	13	11	17	17	13	15	19	14	19	25	36	42	24	23	19	17	17	16	13	13	21	25	22	10	15	19	19	21	11	9	20	878

TABLE No. 5.—Quarterly Births and Deaths during 1897.

	Quarters.	East Sub-District, 39,306					West Sub-District, 48,229					Borough, 87,287				
		1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
BIRTHS	Males	207	186	194	179	766	201	192	203	201	797	408	378	397	380	1563
	Females...	205	182	192	198	777	195	171	164	184	714	400	353	356	382	1491
	Total	412	368	386	377	1543	396	363	367	385	1511	808	731	753	762	3054
	Rate	42·0	37·5	39·4	38·4	39·3	32·9	30·2	30·5	32·0	31·4	37·1	33·6	34·6	35·0	35·1
DEATHS	Males	135	127	188	120	570	104	84	163	122	473	239	211	351	242	1043
	Females...	122	74	152	104	452	104	82	123	96	405	226	156	275	200	857
	Total	257	201	340	224	1022	208	166	286	218	878	465	367	626	442	1900
	Rate	26·2	20·5	34·7	22·8	26·0	17·3	13·8	23·8	18·1	18·2	21·3	16·8	28·7	20·3	21·8
	60 years and upwards ...	65	43	39	44	191	54	41	39	39	173	119	84	78	83	364
	Under 1 year	76	51	176	60	363	51	48	140	69	308	127	99	316	129	671
	1—5 years	27	34	59	56	176	21	25	53	33	132	48	59	112	89	308
	Zymotics	22	22	106	38	188	24	27	118	45	214	46	49	224	83	402
	Rate	2·2	2·2	10·8	3·8	4·7	1·9	2·2	9·8	3·7	4·4	2·1	2·2	10·3	3·8	4·6
	Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Measles	2	4	10	6	22	1	7	6	13	27	3	11	16	19	49
	Scarlet Fever	3	5	4	1	13	1	1	7	2	11	4	6	11	3	24
	Whooping Cough ...	8	2	7	1	18	5	5	6	5	21	13	7	13	6	39
	Diphtheria	1	6	5	9	21	10	4	6	17	37	11	10	11	26	58
	Typhoid Fever	1	...	2	6	9	3	1	5	3	12	4	1	7	9	21
	Influenza	4	...	...	2	6	4	3	...	...	7	8	3	...	2	13
	Diarrhœa	1	2	78	11	92	...	5	87	4	96	1	7	165	15	188
	Phthisis...	19	15	10	8	52	16	7	13	15	51	35	22	23	23	103
	Respiratory Diseases ...	72	37	25	72	206	34	21	20	43	118	106	58	45	115	324
	Uncertified	2	...	1	...	3	3	2	1	1	7	5	2	2	1	10
	Inquests...	23	14	22	18	77	10	10	7	18	45	33	24	29	36	122
Deaths in Public Institutions in the East Sub-District.	Hospital											39	42	37	46	164
	Workhouse											57	42	32	54	185
	From Outside the Borough											24	32	26	45	127
	From the West Sub-District											28	21	15	21	85
	No Home											7	5	6	9	27

TABLE No. 6.

DEATHS in the Sub-Districts during the year 1897, classified according to Ages and Diseases.

	EAST SUB-DISTRICT. AGES.							WEST SUB-DISTRICT. AGES.						
	0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards	TOTALS	0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards	TOTALS
I.—Zymotic Diseases ...	82	73	18	7	7	1	188	100	77	24	7	5	1	214
III.—Dietic Diseases	..	...	...	4	...	...	4	..	..	..	...	...	..	
IV.—Constitutional Diseases	28	8	11	58	13	2	120	31	11	19	64	13	1	139
V.—Developmental Diseases	30	...	.	2	15	28	75	26	.		1	9	25	61
VI.—Local Diseases	170	84	27	139	93	23	536	99	41	18	110	82	30	380
VII.—Violence	2	7	8	11	4	3	35	1	3	5	11	1	2	23
VIII.—Ill-Defined Causes ...	51	4	...	7	2	...	64	51	..	1	5	3	1	61
Totals ...	363	176	64	228	134	57	1022	308	132	67	198	113	60	878
I—Zymotic Diseases.														
1—Miasmatic.														
Measles	2	19	1	...	...	...	22	10	16	1	...	..	...	27
Scarlet Fever	...	9	4	...	...	.	13	1	7	3	...	..	...	11
Whooping Cough	9	9	...	...	...	...	18	10	11	...	...	..	...	21
Diphtheria	1	12	7	...	1	..	21	4	22	11	..	...	...	37
Simple Fever	...	1		...	...	.	1	..	...	.	...	...	...	
Typhoid Fever	...	1	5	3	...	...	9	...	..	8	4	..	...	12
Influenza	..	...	1	2	2	1	6	...	2	...	1	4	...	7
2—Diarrhœal.														
Diarrhœa	67	22	...	..	3	.	92	75	19	1	...	1	..	96
5—Venereal.														
Syphilis	1	...	..	...	...	..	1	..	...	...	1	...	...	1
Stricture of Urethra	..	...	...	1	...	..	1	...	...	...	..	...	...	...
6—Septic.														
Erysipelas	2	...	..	1	1	...	4	...	...	..	...	...	1	1
Puerperal Fever	..	..	...	..	...	...	...	...	..	...	1	..	...	1
III.—Dietic Diseases.														
Chronic Alcoholism		..	...	1	...	...	1	...	...	..	...	.	...	..
Delirium Tremens	...	...	...	3	...	..	3	..	..	...	...	...	..	.
IV—Constitutional Diseases.														
Rheumatic Fever	...	...	3	2	.	.	5	..	...	1	2	...	..	3
Rheumatism	..	...	..	..	...	..	...	...	...	...	1	1	...	2
Rickets	.	..	...	..	...	...	...	...	1	..	...	...	...	1
Malignant Disease	..	..	...	14	9	2	25	...	..	..	16	10	1	27
Tabes Mesenterica	8	...		...	...	...	8	4	1	2	..	...	..	7
Tubercular Meningitis		2	...	..	..	...	2	2	5	1	..	...	...	8
Phthisis	5	3	6	37	1	...	52	..	..	13	38	...	..	51
Other Tuberculoses	1	1	1	...	1	..	4	1	1	1	3	...		6
Purpura	..	...	..	..	.	...	...	...	...	..	1	...	...	1
Anæmia	...	..	...	3	...	...	3	...	..	1	1	...	..	2
Diabetes	.	.	...	2	2	...	4	...	..		2	2	...	4
Others	14	2	1	.	...	...	17	21	3	..	..	...	..	27

TABLE No. 6—Continued.

	EAST SUB-DISTRICT.							WEST SUB-DISTRICT.						
	AGES.							AGES.						
	0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards	TOTALS	0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards	TOTALS
V—Developmental Diseases.														
Premature Birth	26	...	..	...	...	...	26	23	..	...	..	...	..	23
Atelectasis	3	..	...	...	..	...	3	...	...	...	...	...	...	..
Congenital Malformations .	1	...	...	..	...	...	1	3	..	..	...	...	...	3
Old Age	...	...	...	2	15	28	45	...	...	..	1	9	25	35
VI—Local Diseases.														
1 Nervous System.														
Meningitis	13	9	3	3	..	..	28	9	9	1	3	1	..	23
Apoplexy	1	1	..	11	15	6	34	...	...	...	11	13	8	32
Epilepsy	..	..	..	2	1	.	3	.	..	...	2	...	..	2
Convulsions	30	7	.	..	...	..	37	11	3	1	1	..	...	16
Disease of Spinal Cord	..	...	..	2	...	..	2	...	..	..	1	1	..	2
Others	..	..	..	2	1	1	4	...	...	2	8	10	2	22
3—Circulatory System.														
Diseases of Heart...	...	...	5	35	18	5	63	..	...	4	26	18	7	55
Others	...	...	...	...	1	...	1	...	..	...	1	...	...	1
4—Respiratory System.														
Laryngitis	...	3	1	..	..	..	4	1	1	2	...	..	...	4
Asthma	...	...	1	1	1	...	3	...	..	...	1	2	1	4
Bronchitis	22	11	1	23	32	5	94	13	3	..	18	17	6	57
Pneumonia...	27	36	7	19	12	1	102	22	13	2	9	2	1	49
Pleurisy	...	...	..	2	...	..	2	...	..	1	...	...	...	1
Others	..	...	..	1	.	...	1	...	1	..	1	1	.	3
5—Digestive System.														
Dentition	7	2	1	...	...	...	10	2	4	...	...	...	..	6
Diseases of Stomach	5	...	1	..	2	...	8	2	...	...	..	.	...	2
Enteritis	60	12	2	4	2	.	80	35	7	...	1	2	..	45
Obstructive Diseases of Intestine	...	...	..	2	..	3	5	1	..	..	1	...	1	3
Peritonitis	2	...	1	1	...	...	4	...	...	1	4	...		5
Cirrhosis of Liver	..	..	...	5	...	...	5	...	..	...	4	2	...	6
Other Diseases of Liver	...	..	..	1	1	1	3	1	...	...	4	3	1	9
Others	1	1	...	2	1	.	5	2	...	...	...	...	...	2
8—Urinary System.														
Nephritis	2	1	...	14	4	...	21	..	...	...	9	7	1	17
Bladder or Prostate		...	...	..	1	...	1	...	..	..	1	1	1	3
Others	..	...	...	1	...	...	1	...	...	...	1	1	...	2

TABLE No. 6—Continued.

	EAST SUB-DISTRICT. AGES.							WEST SUB-DISTRICT. AGES.						
	0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards	TOTALS	0 to 1	1 to 5	5 to 25	25 to 60	60 to 75	75 and upwards	TOTALS
9—Reproductive System.														
B—*Parturition.*														
Abortion	...	...	...	2	...	...	2	...	...	...	...	...	...	...
Puerperal Convulsions	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Flooding	...	...	...	1	...	...	1	...	...	..	1	..	...	1
Others	...	...	3	3	...	...	6	...	...	1	1	...	...	2
10—Bones and Joints.														
Caries, Necrosis	...	...	..	1	...	...	1	...	..	1	..	...	...	1
Arthritis	...	...	1	...	...	...	1	...	..	2	...	...	...	2
11—Integumentary System.														
Carbuncle	...	...	...	...	...	...	...	...	..	...	...	...	1	1
Others	...	...	...	1	1	1	4	..	...	..	...	1	..	1
VII—Violence.														
1—Accident or Negligence.														
Fractures and Contusions	...	1	3	4	1	1	10	...	...	1	3	1	1	6
Cut, Stab	...	...	...	1	...	...	1	...	...	...	...	..	...	...
Burn, Scald	...	4	1	2	2	2	11	...	3	2	..	..	1	6
Poison	...	...	1	...	...	...	1	..	...	1	1	...	...	2
Drowning	..	2	...	2	...	...	4	..	...	1	2	...	...	3
Suffocation	...	2	...	..	...	...	...	2	1	...	...	...	...	...	1
3—Suicide.														
Gunshot Wounds	...	...	..	...	...	1	...	..	1	...	...	...	...	...	...
Cut, Stab	...	...	...	...	...	1	...	...	1	...	...	...	1	...	...	1
Poison	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...
Hanging	...	...	...	..	.	...	...	...	1	...	..	..	4	...	...	4
Otherwise	...	...	...	...	...	2	...	..	...	...	..	...	...	...	...	...
VIII—Ill-Defined Causes.														
Debility, Atrophy, Inanition	...	42	1	...	...	...	..	43	46	...	...	2	..	...	48
Mortification	...	...	...	1	...	...	1	...	...	...	...	2	1	3
Abscess	...	...	...	..	2	2	...	...	...	..	4	1	...	...	...	...	1
Hæmorrhage	...	...	...	2	...	..	2	...	...	1	1	1	...	3
Causes not Specified	...	7	1	...	4	2	...	14	4	..	.	2	...	...	6

TABLE No. 7.

TABLE OF DEATHS during the Year 1897 in the Urban Sanitary District of WOLVERHAMPTON; classified according to DISEASES, AGES, AND LOCALITIES, *and the proportion of Deaths which occurred in Public Institutions.*

	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.								MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.														
	At all Ages.	Under 1 year.	1 and under 5	5 and under 15	15 and under 25	25 and under 60	60 and upwards		2	3	6	9	11	12	13	14	15	16	17	18	20	21	22
											FEVERS												
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	Scarlatina	Diphtheria	Enteric or Typhoid	Puerperal	Erysipelas	Measles	Whooping Cough	Diarrhœa and Dysentery	Rheumatic Fever	Phthisis	Bronchitis, Pneumonia, & Pleurisy	Heart Disease	Injuries	All other Diseases	TOTAL
East Sub-District	1022	363	176	37	27	228	191	Under 5 yrs	9	13	1	...	2	21	18	89	...	8	96	...	9	273	539
								5 & upwards	4	8	8	...	2	1	...	3	5	44	102	63	26	217	483
West Sub-District	878	308	132	34	33	198	173	Under 5 yrs	8	26	...	..	...	26	21	94	...	...	51	...	4	210	440
								5 & upwards	3	11	12	1	1	1	...	2	3	51	56	55	19	223	438
TOTAL IN BOROUGH	1900	671	308	71	60	426	364	Under 5 yrs	17	39	1	...	2	47	39	183	...	8	147	...	13	483	979
								5 & upwards	7	19	20	1	3	2	...	5	8	95	158	118	45	440	921
Deaths in Institutions in the East Sub-District. — General Hospital	164	7	28	19	21	74	15	Under 5 yrs	...	10	...	...	...	1	1	...	...	1	2	...	10	10	35
								5 & upwards	...	7	8	...	...	...	...	...	2	2	11	16	24	59	129
Workhouse	185	16	3	...	2	60	104	Uuder 5 yrs	...	...	...	...	...	1	...	1	...	...	3	...	...	14	19
								5 & upwards	...	1	...	...	1	...	...	2	3	17	45	13	2	82	166
From outside the Borough	127	5	9	9	15	49	40	Under 5 yrs	...	...	...	...	...	1	...	...	...	1	2	...	3	7	14
								5 & upwards	...	1	5	...	...	...	...	...	2	3	22	11	12	57	113
From West Sub-District	85	6	13	7	5	32	22	Under 5 yrs	...	10	...	...	...	1	...	...	...	...	1	...	3	4	19
								5 & upwards	...	4	2	...	1	...	...	...	2	6	7	9	5	30	66

TABLE No. 8.

Deaths and Death Rates for the past Twenty-five years.

Year.	East Sub-District.				West Sub-District.				Borough.				Estimated Populations.		
	Total.	Rate.	Zymotic.	Rate.	Total.	Rate.	Zymotic.	Rate.	Total.	Rate.	Zymotic.	Rate.	East.	West.	Borough.
1873	1,125	29·7	...	...	631	19·8	..	...	1,756	25·1	...	...	38,010	31,841	69,906
1874	1,048	27·6	...	...	627	19·3	...	...	1,675	23·6	...	...	38,087	32,487	70,636
1875	1,155	30·3	...	..	640	19·3	...	...	1,795	25·2	...	...	38,163	33,140	71,373
*1876	1,099	28·2	...	...	655	19·0	...	...	1,754	25·9	...	...	38,241	33,806	72,118
1877	1,157	30·2	...	...	611	17·7	...	...	1,768	24·3	...	...	38,318	34,485	72,871
1878	1,081	28·2	...	...	644	18·3	...	...	1,725	23·5	...	...	38,396	35,178	73,632
1879	1,093	28·5	...	...	608	17·0	...	...	1,701	22·9	...	...	38,474	35,884	74,402
1880	960	24·9	.	...	629	17·2	...	...	1,589	21·2	...	...	38,552	36,606	75,178
*1881	998	25·4	...	...	650	17·1	...	...	1,648	21·3	...	...	38,620	37,305	75,932
1882	1,056	27·4	...	...	657	17·3	...	...	1,713	22·4	...	...	38,663	37,909	76,596
1883	1,042	27·0	...	...	601	15·6	...	...	1,643	21·3	...	...	38,706	38,552	77,266
1884	1,158 981	29·9 25·4	222	5·7	699 753	17·9 19·3	115	2·9	1,857 1,734	23·9 22·3	337	4·3	38,748	39,146	77,942
*1885	1,012 844	25·6 21·4	102	2·5	658 720	16·2 17·8	74	1·8	1,670 1,564	20·9 19·5	176	2·2	38,791	39,779	78,624
1886	1,125 955	29·0 24·6	182	4·7	697 746	17·3 18·5	156	3·8	1,822 1,701	23·0 21·5	338	4·2	38,834	40,423	79,311
1887	1,133 944	29·2 24·3	122	3·1	659 720	16·1 17·5	102	2·4	1,792 1,664	22·4 20·8	224	2·8	38,876	41,077	80,005
1888	1,005 827	25·8 21·3	95	2·4	707 768	17·0 18·5	121	2·9	1,712 1,595	21·2 19·8	216	2·6	38,919	41,741	80,705
1889	1,065 883	27·4 22·7	104	2·6	674 737	15·9 17·4	102	2·4	1,739 1,620	21·4 19·9	206	2·5	38,962	42,417	81,411
*1890	1,183 977	29·8 24·6	98	2·4	725 795	16·5 18·1	80	1·8	1,908 1,772	22·8 21.2	178	2·1	39,005	43,103	82,124
1891	1,214 1,026	31·1 26·3	120	3·0	822 888	18·8 20·3	122	2·7	2,036 1,914	24·6 23·1	242	2·9	39,048	43,800	82,842
1892	1,117 935	28·6 24·0	125	3·2	724 781	16·3 17·6	96	2·1	1,841 1,716	22·1 20·6	220	2·6	39,091	44,509	83,567
1893	1,260 1,040	32·3 26·6	153	3·9	73)	16·1 18·0	129	2·8	1,990 1,853	23·6 22·0	282	3·3	39,134	45,229	84,298
1894	1,175 975	30·0 24·9	193	4·9	668 744	14·5 16·2	121	2·6	1,843 1,719	21·7 20·2	314	3·7	39,177	45,961	85,036
1895	1,335 1,106	34·1 28·2	202	5·1	872 963	18·7 20·6	235	5·0	2,207 2,069	25·8 24·2	437	5·1	39,220	46,706	85,781
*1896	1,088 899	27·2 22·5	166	4·1	773 841	16·0 17·4	146	3·0	1,861 1,740	21·1 19·7	312	3·5	39,263	47,462	86,530
1897	1,234 1,022	31·5 26·0	188	4·7	793 878	16·4 18·2	214	4·4	2,027 1,900	23·3 21·8	402	4·6	39,306	48,229	87,287

* These years contain 53 weeks.

For explanation, see remarks at the end of the text.

TABLE No. 9.—Eleven Years' Annual Deaths, &c.

	1887	1888	1889	1890*	1891	1892	1893	1894	1895	1896*	1897	A
Small Pox	—	—	—	—	—	—	1	5	—	—	—	0·6
Measles	31	39	40	32	25	41	21	73	40	8	49	35·0
Scarlet Fever	16	17	6	13	14	3	25	55	34	21	24	20·4
Whooping Cough	29	58	48	27	26	80	4	28	53	28	39	38·1
Diphtheria...	7	10	7	4	5	4	5	33	84	55	58	21·4
Typhoid Fever	14	11	9	9	15	16	23	17	18	37	21	16·9
Diarrhœa	105	60	84	68	105	55	161	62	135	131	188	96·6
Phthisis and Respiratory... ...	512	560	485	673	668	582	560	520	553	450	427	556·3
60 years and upwards	419	406	406	452	491	400	445	389	468	402	364	427·8
Under one year	469	445	479	477	531	482	600	484	659	561	671	518·7
1—5 years...	272	237	299	250	287	275	212	310	353	220	308	271·5
Under 1 year, per 1,000 births ...	175	166	179	171	188	171	206	167	217	185	219	182·8
Total Deaths	1664	1595	1620	1772	1914	1716	1853	1719	2069	1740	1900	1766·2
Rate per 1,000	20·8	19·8	19·9	21·2	23·1	20·6	22·0	20·2	24·2	19·7	21·8	21·15
Zymotics	224	216	206	178	242	220	282	314	437	312	402	263·1
Rate per 1,000	2·8	2·6	2·5	2·1	2·9	2·6	3·3	3·7	5·1	3·5	4·6	3·11
Births	2675	2674	2666	2735	2820	2805	2902	2889	3027	3023	3054	2821·6
Rate per 1,000	33·5	33·2	32·8	32·8	34·1	33·6	34·5	34·0	35·4	34·3	35·1	33·82

* These years contain 53 weeks. A—Annual averages for the ten years preceding 1897.

TABLE No. 9a.—Eleven Years' Quarterly Deaths.

Quarters ending	1887				1888				1889				1890				1891				1892				1893				1894				1895				1896				1897			
	2/4	2/7	30/9	31/12	31/3	30/6	29/9	29/12	30/3	29/6	28/9	28/12	29/3	28/6	27/9	*31/12/91	4/4	4/7	3/10	2/1	2/4	2/7	1/10	31/12	1/4	1/7	30/9	30/12	31/3	30/6	29/9	29/12	30/3	29/6	28/9	28/12	28/3	27/6	26/9	*2/1	3/4	3/7	2/10	1/1
Small Pox ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	3	2	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles ...	19	4	7	1	9	6	5	19	10	11	11	8	3	10	5	14	5	—	—	20	21	16	3	1	6	—	5	10	46	27	—	—	—	—	7	33	6	—	1	1	8	11	16	19
Scarlet Fever...	2	1	5	8	8	4	4	1	2	—	1	3	4	2	3	4	2	2	2	8	1	—	—	2	1	1	6	17	7	19	19	10	17	2	8	7	6	1	7	7	4	6	11	3
Whooping Cgh.	6	1	7	15	20	14	11	4	4	14	6	24	17	8	—	2	—	—	5	21	47	27	3	3	1	—	1	2	5	10	11	2	8	12	14	19	2	13	8	5	13	7	13	6
Diphtheria.....	—	3	1	3	4	4	1	1	—	2	2	3	3	—	—	1	1	2	1	1	—	3	1	—	—	1	1	3	5	8	10	10	19	24	14	27	19	15	9	12	11	10	11	26
Typhoid Fever.	1	2	5	6	2	5	2	2	1	2	4	2	2	3	1	3	5	2	5	3	1	7	5	3	3	4	9	7	—	2	6	9	3	—	5	10	12	9	11	5	4	1	7	9
Diarrhœa ...	6	4	90	5	4	7	30	19	3	8	56	17	7	3	42	16	5	7	66	27	7	4	31	13	3	11	140	7	4	1	44	13	2	1	113	19	10	7	101	13	1	7	165	15
Phthisis and Respiratory	170	120	75	147	184	137	95	144	165	116	76	128	248	139	109	177	177	204	84	203	241	129	84	128	156	136	98	170	154	143	91	132	211	138	89	115	128	108	63	151	141	80	68	138
60 yrs. & upwd.	134	130	66	89	127	98	80	101	130	84	87	105	144	91	80	137	137	168	79	107	143	93	69	95	100	118	91	136	102	114	82	91	194	111	83	80	101	94	76	131	119	84	78	83
Under 1 year...	98	95	172	104	118	103	113	111	103	109	138	129	116	79	147	135	93	120	159	159	143	107	120	112	127	99	232	142	115	115	129	125	138	113	260	148	107	102	188	164	127	99	316	129
1—5 years ...	84	40	63	85	73	64	37	64	67	71	74	87	83	57	43	67	47	54	49	136	123	81	40	31	24	34	71	83	96	91	68	55	79	65	89	120	62	46	52	60	48	59	112	89
Total Deaths...	447	394	417	406	478	395	335	387	433	371	386	423	545	365	392	470	417	536	400	561	587	415	340	374	403	389	535	526	460	473	394	392	599	439	556	475	418	374	451	497	465	367	626	442
Rate per 1,000	22·4	19·7	20·9	20·3	23·7	19·6	16·6	19·2	21·3	18·6	19·0	20·8	26·6	17·8	19·1	21·3	20·2	25·9	19·3	27·1	28·1	19·9	16·3	17·9	19·1	18·5	25·4	25·0	21·7	22·3	18·5	18·5	28·0	20·5	26·0	22·2	19·3	17·3	20·9	21·4	21·3	16·8	28·7	20·3
Zymotics ...	39	20	122	43	61	45	56	54	22	42	82	60	44	30	58	46	24	41	88	89	92	59	45	24	19	22	169	72	81	86	98	49	79	69	174	115	60	53	141	58	46	49	224	83
Rate per 1,000	1·9	1·0	6·1	2·1	3·0	2·2	2·7	2·6	1·0	2·0	4·0	2·9	2·1	1·4	2·8	2·0	1·1	1·9	4·2	4·3	4·4	2·8	2·1	1·1	0·9	1·0	8·0	3·4	3·8	4·0	4·6	2·3	3·6	3·2	8·1	5·3	2·7	2·4	6·5	2·4	2·1	2·2	10·3	3·8
Estimated Population	80,005				80,705				81,411				82,124				82,842				83,567				84,298				85,036				85,781				86,530				87,287			

* These Quarters contain 14 weeks.

TABLE No. 10.

DEATH-RATES, ETC., IN THE ***33*** *GREAT TOWNS IN 1897.*

	Population estimated to middle of 1897	Corrected Death-Rate.	Recorded Death-Rates.							Deaths under 1 year to a 1,000 Births.
			Principal Zymotic Diseases.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhœa.	
England and Wales		17·43								
England and Wales, *less* 33 Towns		16·26								
33 Towns	10,992,524	20·65	2·87	0·55	0·18	0·31	0·41	0·18	1·24	177
London	4,463,169	19·38	2·58	0·43	0·18	0·51	0·41	0·13	0·92	159
West Ham	273,682	16·89	2·61	0·51	0·11	0·37	0·36	0·18	1·08	172
Croydon	121,171	13·62	1·43	0·14	0·10	0·07	0·26	0·07	0·79	135
Brighton	121,401	15·23	1·64	0·14	0·10	0·10	0·21	0·18	0·91	144
Portsmouth	182.585	16·57	2·53	0·19	0·06	0·15	0·35	0·24	1·54	168
Plymouth	97,658	18·51	2·17	0·50	0·05	0·13	0·54	0·08	0·87	185
Bristol	232,242	17·97	1·83	0·25	0·08	0·15	0·50	0·20	0·65	149
Cardiff	170,063	16·67	2·19	0·44	0·10	0·53	0·20	0·12	0·80	151
Swansea	100,309	17·28	1·36	0·45	0·10	0·11	0·42	0·07	0·21	140
WOLVERHAMPTON	**87,287**	**23·07**	**4·22**	**0·53**	**0·24**	**0·62**	**0·44**	**0·28**	**2·11**	**217**
Birmingham	505,772	23·86	3·88	0·79	0·18	0·29	0·44	0·18	2·00	214
Norwich	110,154	17·98	2·21	0·03	0·10	0·09	0·43	0·29	1·27	194
Leicester	203,599	19·17	3·13	0·07	0·35	0·36	0·40	0·19	1·76	205
Nottingham	232,934	20·19	2·81	0·21	0·15	0·09	0·49	0·21	1·66	206
Derby	103,291	17·68	1·92	0·17	0·10	0·09	0·21	0·25	1·10	168
Birkenhead	111,249	20·07	2·45	0·50	0·21	0·23	0·29	0·24	0·98	164
Liverpool	633,070	26·76	3·83	0·54	0·33	0·20	0·56	0·27	1·93	200
Bolton	121,433	24·89	4·02	1·78	0·19	0·05	0·34	0·21	1·45	186
Manchester	534,299	26·17	3·81	1·18	0·23	0·09	0·56	0·19	1·56	195
Salford	213,190	26·88	5·50	2·22	0·29	0·15	0·53	0·31	2·00	219
Oldham	145,845	21·97	2·61	0·67	0·14	0·08	0·53	0·14	1·05	183
Burnley	106,122	22·41	3·98	1·33	0·05	0·57	0·60	0·18	1·25	220
Blackburn	131,330	21·90	3·45	1·11	0·05	0·06	0·63	0·29	1·31	206
Preston	115,103	26·78	5·63	2·77	0·04	0·03	0·36	0·30	2·23	262
Huddersfield	101,454	19·07	1·50	0·27	0·32	0·20	0·21	0·15	0·35	131
Halifax	95,747	18·35	1·39	0·50	0·22	0·09	0·09	0.17	0·32	140
Bradford	231.260	19·97	2·22	0·35	0·04	0·07	0·19	0·13	1·44	179
Leeds	409,472	22·03	2·80	0·40	0·23	0·16	0·24	0·20	1·57	190
Sheffield	351,848	23·57	3·49	0·56	0·26	0·13	0·40	0·31	1·83	198
Hull	225,045	19·50	3·25	0·11	0·27	0·14	0·25	0·25	2·23	181
Sunderland	142,107	20·67	2·56	0·44	0·08	0·03	0·54	0·27	1·20	165
Gateshead	101,070	19·63	2·33	0·50	0·17	0·08	0·31	0·20	1·07	172
Newcastle	217,555	20·79	2·09	0·43	0·10	0·12	0·28	0·16	1·00	178

TABLE A.

SUMMARY OF ROUTINE WORK.

Nuisances reported by Sanitary Inspectors	4,403
Nuisances reported at the Office by residents	157
Preliminary Notices served for the Abatement of Nuisances	3,561
Legal Notices ditto ditto	1,429
Inspections of Premises after service of Notices	10,780
Number of Infectious Cases of Sickness enquired into ...	1,840
Houses disinfected	515
Articles disinfected in Steam Disinfector	12,508
Reports made to the Borough Surveyor of Dangerous Buildings, &c.	326
Reports made to the Waterworks Engineer of Waste of Water	351

TABLE B.

SPECIAL INSPECTIONS.

Number of visits paid to Slaughterhouses			1,250
Ditto	ditto	Bakehouses	803
Ditto	ditto	Workshops	1,080
Ditto	ditto	Dairies	35
Ditto	ditto	Cowsheds	89
Ditto	ditto	Milkshops	1,107
		Total	4,364

TABLE C.

UNWHOLESOME FOOD CONDEMNED AND DESTROYED.

5 Carcases of Beef		
1 Fore, 1 Hind Quarter, and 2 pieces of Beef		
8 Carcases of Calves	weighing	
10 Carcases of Pigs and 2 Hind Parts of Pigs		4,445 lbs.
6 Carcases of Lambs, and 1 Hind Part of a Lamb		
4 Carcases of Sheep		
28 lbs. of Bloaters.		
8 Stones of Haddock.		
18 Bags of Mussels.		
2 boxes of dried Haddock.		
12 Baskets of Cherries.		
6 Barrels and 2 Baskets of Pears.		
3 Crates of Bananas		

TABLE D.

HOUSES CLOSED AS UNFIT FOR HABITATION.

Deficient air space	26
Damp and dilapidated	6
Dilapidated	5
Dilapidated and close	6
Damp, dilapidated, and close	4
Damp	1
Damp and close	2
Total ...	50

TABLE E.

SUMMARY OF CIRCULARS AND NOTICES SERVED.

To pave or repair paving of yards, &c.	280
To repair and cleanse soft water cisterns	47
To pave Courts...	7
To cleanse and limewash houses, premises, &c.	898
To provide or repair spouting	351
To repair closets, &c.	334
To provide or repair flushing cisterns to W.C.'s	9
To open and cleanse W.C. and yard drains	496
To remove Poultry	182
,, ,, Refuse	66
,, ,, Manure	89
,, ,, Pigs...	49
,, ,, Hogwash	85
,, ,, Offensive water from cellars	24
To trap drains	92
To discontinue overcrowding	70
To repair houses	133
To provide ashtubs or repair ashpits	221
To provide a proper supply of wholesome water in lieu of contaminated well water	15
To take up and re-lay defective drainage	47
To drain stables, cellars, premises, &c., into the Main Sewer	77
To do away with catchpits	25
To drain sinks	251
To convert privies into water carriage system	64
,, ,, pan closets ,, ...	26
To repair waste water closets	19
To remove Bell and D traps and fix stoneware gullies ...	24
To reconstruct urinals	26
To provide a proper supply of wholesome water	10
To fix wash-down closets in lieu of insanitary closets ...	22
To abate nuisance from smoke	6
To provide manure middens	18
Miscellaneous	340

TABLE F.

The following is a record of the Magisterial proceedings taken :—

No.	Nature of Offence.	Cases heard.	Result.
1	House in a foul state.. ..	Jan. 23rd, 1897	Case withdrawn on payment of costs, as house was cleansed
2	Foul privies and ashpits ..	,, ,, ,,	Adjourned for 14 days for work to be done and to pay costs.
3	Refusing to close houses condemned as unfit for habitation	Feb. 13th, ,,	Adjourned for 14 days for houses to be closed and to pay costs.
4	Tenants refusing to quit abovementioned houses	,, ,, ,,	Adjourned for 14 days.
5	Refusing to quit house condemned as unfit for habitation	,, ,, ,,	Fined 40s. and costs, or one month's imprisonment.
6	Defective drainage and spouting and premises foul	Aug. 7th, ,,	Ordered to abate and pay costs.
7	Defective drainage and offensive dumbwell	,, ,, ,,	Ordered to abate and pay costs.
8	Houses without a proper supply of water	,, ,, ,,	Adjourned for 7 days for water to be put on and pay costs.
9	Defective drainage and roofs	,, ,, ,,	Ordered to abate and pay costs.
10	Insufficient closet accommodation & defective paving	,, 14th ,,	Adjourned for 14 days for work to be done and pay costs.
11	Defective sink drainage and sewage water in cellars	,, ,, ,,	Ordered to abate and pay costs.
12	Foul water tank, no ash accommodation, and foul premises	,, ,, ,,	Ordered to abate and pay costs.
13	Non-compliance with Magistrates' order in cases Nos. 14 and 15	Sep. 25th, ,,	Fined 30s. and costs in each case.
14	Defective spouting and paving, and dilapidated closet	Dec. 4th ,,	Ordered to abate and pay costs.
15	Defective sink drainage and soft-water cisterns foul	,, ,, ,,	,, ,, ,,
16	Foul privy and catchpits	,, 11th, ,,	Adjourned for 3 weeks for work to be done and pay costs.
17	Defective spouting	,, ,, ,,	Adjourned for 7 days and pay costs.
18	Pigs being kept	,, ,, ,,	Withdrawn on payment of costs
19	Premises without drainage, brewhouses and closets dilapidated, and yard paving and spouting defective	,, ,, ,,	Adjourned for 3 weeks for work to be done and pay costs.
20	Paving and spouting defective, brewhouses dilapidated, and premises foul	,, ,, ,,	,, ,, ,,